ORDER NO. MD9706050C1
A6

Service Manual

COMPACT disc DIGITAL AUDIO

MASH* multi-stage noise shaping

※ • MASH is a trademark of NTT.

Compact Disc Changer

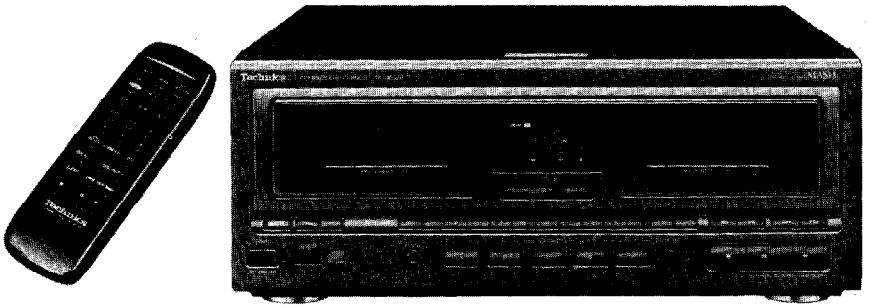
SL-MC410

Colour (K) .... Black Type

Areas

P ..... U.S.A.

PC ..... Canada.



Traverse Deck: RAE0150Z Mechanism Series

Specifications

■ AUDIO

No. of channels	2 (left and right, stereo)
Frequency response	2–20,000 Hz, ±1 dB
Output voltage	2 V (at 0 dB)
Dynamic range	92 dB
S/N	100 dB
Harmonic distortion	0.007% (1 kHz, 0 dB)
Wow and flutter	Below measurable limit
DA converter	※ MASH (1 bit)
Output impedance	Approx.1 kΩ
Load impedance	More than 10 kΩ

■ PICKUP

Wavelength	780 nm

■ GENERAL

Power consumption	11 W
Power supply	AC 120 V, 60 Hz
Dimensions (W × H × D)	430 × 170 × 387 mm (16-15/16" × 6-11/16" × 15-1/4")
Weight	7.0 kg (15.4 lb.)

Note:
Specifications are subject to change without notice.
Weight and dimensions are approximate.

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⚠WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

■ Precaution of Laser Diode

CAUTION: This unit utilizes a class 1 laser. Invisible laser radiation is emitted from the optical pickup lens when the unit is turned on :

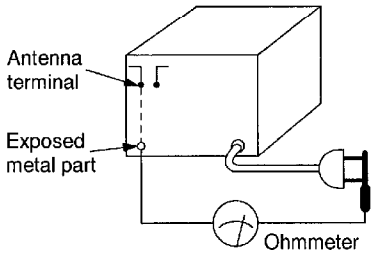
1. Do not look directly into the pickup lens.
2. Do not use optical instruments to look at the pickup lens.
3. Do not adjust the preset variable resistor on the optical pickup.
4. Do not disassemble the optical pickup unit.
5. If the optical pickup is replaced, use the manufactures specified replacement pickup only.
6. Use of control or adjustments or performance of procedures other than those specified herin may result in hazardous radiation exposure.

■ Safety Precaution (This "safety precaution" is applied only in U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacture's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

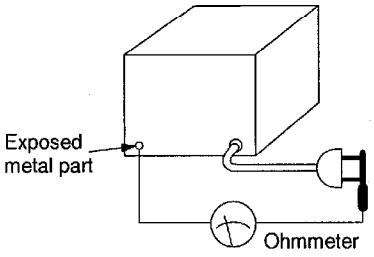
● INSULATION RESISTANCE TEST

1. Unplug the power cord and short the two prongs of the plug with a jump
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2 MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)



(Fig. A)

Resistance=3MΩ–5.2MΩ



(Fig. B)

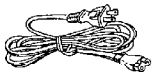
Resistance=Approx. ∞

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.

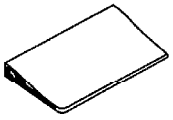
4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

■ Accessories

- AC power supply cord 1pc. (SJA172)



- Remote control transmitter 1pc. (EUR644376)



- FM indoor antenna 1pc. (RSA0006-J)

■ Precautions

Cautions on moving this unit

Before moving the changer to another location, be sure to remove all discs from the slots and turn off the changer.

Failure to do so will expose the compact discs and the changer to the risk of severe damage.

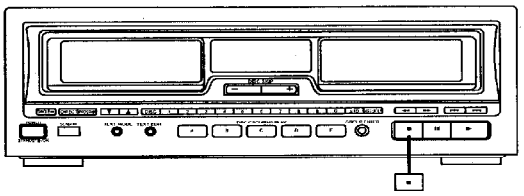
CAUTION

The changer mechanism automatically locks when power is turned off, to protect it against damage in transport. Therefore, always press POWER and make sure "OFF" appears on the display before you unplug the changer.

Other cautions

Outside light or noise may sometimes cause the changer to detect a disc when there isn't one. However, the changer always correctly detects the disc when in the play mode no matter what.

Do not leave the front panel open. Infiltrating dust or other matter may lead to damage or malfunctions.



When getting service

Before bringing in your changer for service, be sure to remove all discs first.

If the disc in play doesn't return to its slot when you press ■, hold the button down for about 4 seconds. The disc should return to the slot.

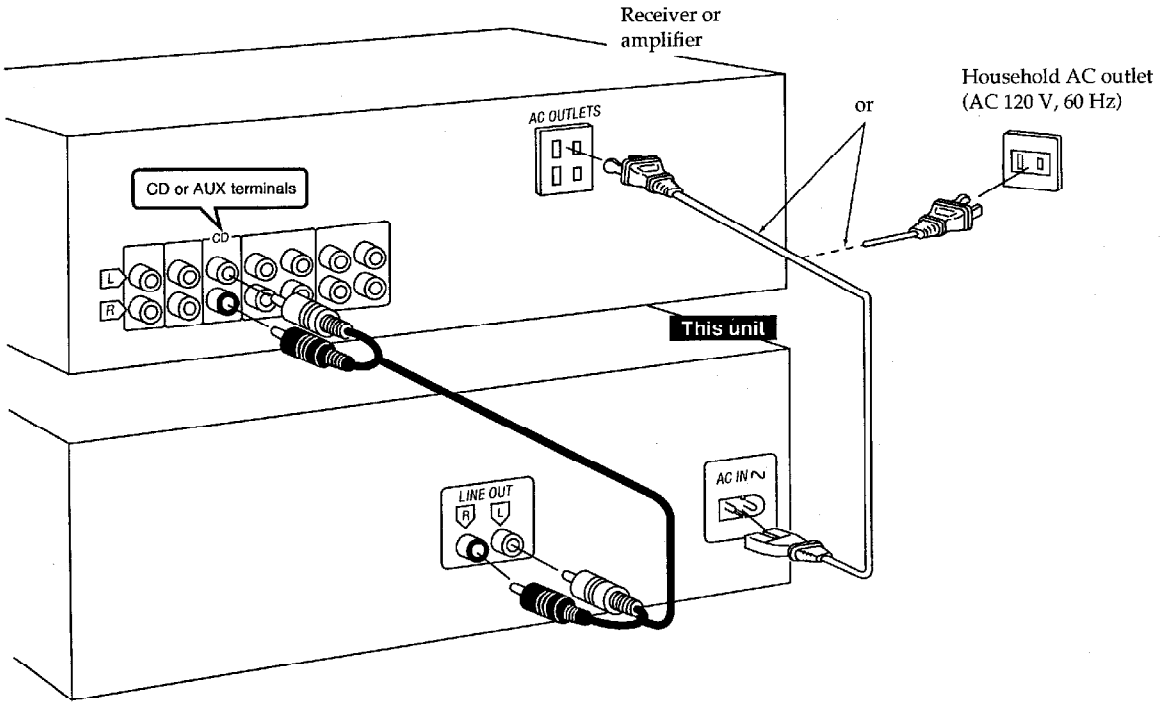
■ Connections

Note

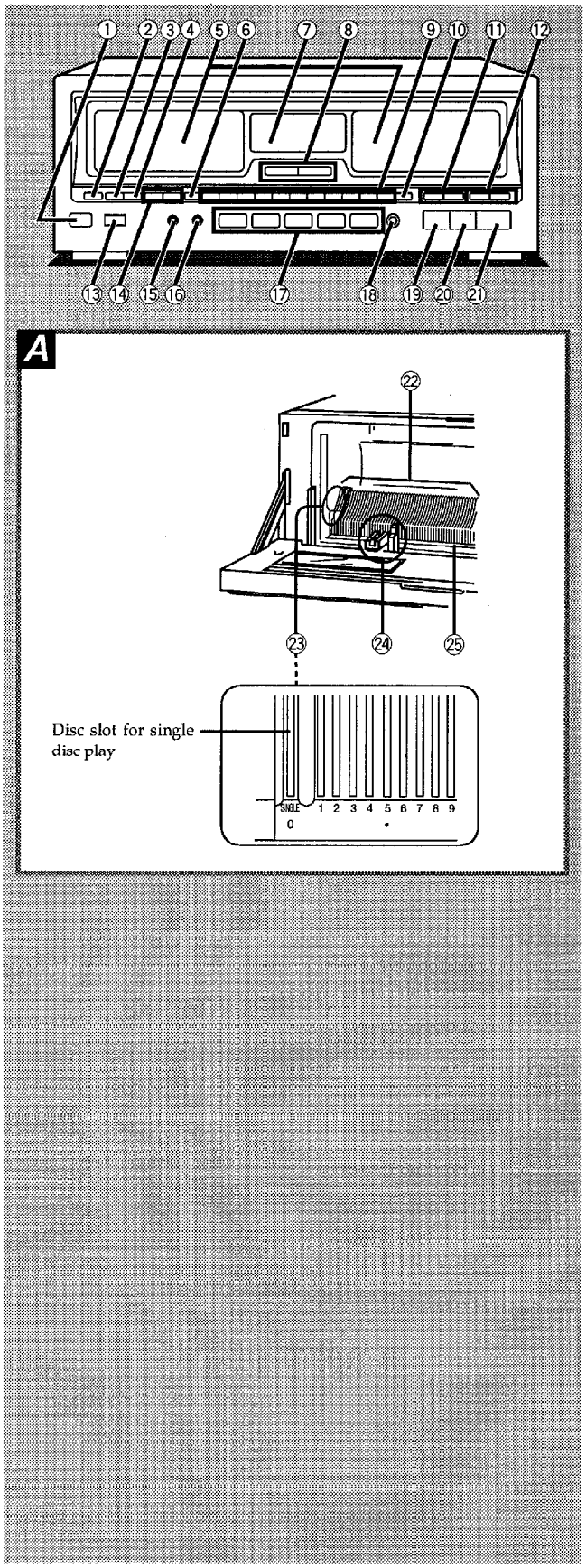
- Set the changer on a flat, level surface.
- Before connecting the changer to your audio system, make sure that the power of the changer and all other system components is turned off.

Stereo connection cable

White (L)
Red (R)



■ Front Panel Control



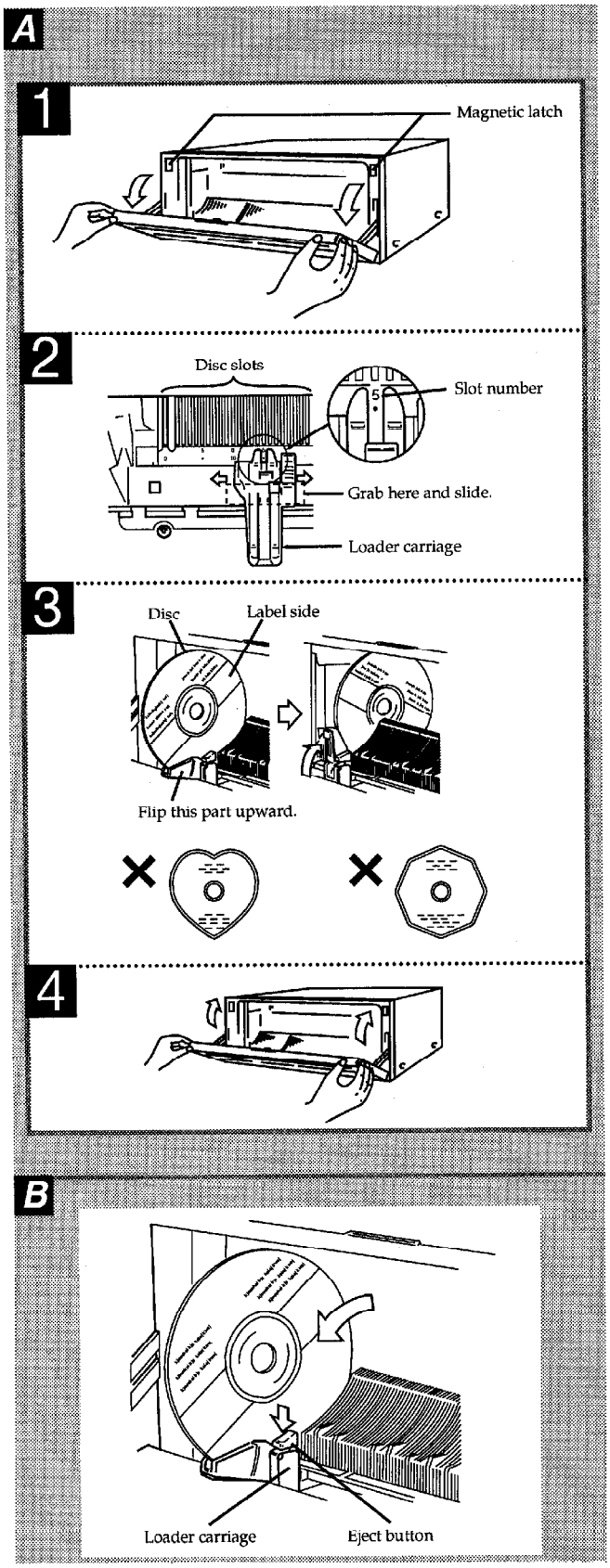
① **Power "STANDBY ⏻/ON" switch (POWER, STANDBY ⏻/ON)**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
② **Single disc play button (SINGLE ▶)**
③ **Direct programming button (DIRECT)**
④ **Programming button (PROGRAM)**
⑤ **Windows**
⑥ **Disc selector button (DISC)**
⑦ **Display**
⑧ **Disc skip buttons (DISC SKIP, –, +)**
⑨ **Numeric buttons (1-9, 0, ≥10)**
⑩ **Disc enter button (DISC ENTER)**
⑪ **Search/Text character select buttons (◀◀ , ▶▶ , SEARCH/CHARACTER)**
⑫ **Track skip/Text cursor removal buttons (|◀◀ , ▶▶|, SKIP/CURSOR)**
⑬ **Remote control signal sensor (SENSOR)**
⑭ **Text search buttons (▼, ▲)**
⑮ **Text mode button (TEXT MODE)**
⑯ **Text edit button (TEXT EDIT)**
⑰ **Disc group buttons (DISC GROUPING PLAY, A, B, C, D, E)**
⑱ **Group enter button (GROUP ENTER)**
⑲ **Stop button (■)**
⑳ **Pause button (❚❚)**
㉑ **Play button (▶)**

Disc slot section A

For an explanation on how to open the front panel, see page 7 "How to set discs".

㉒ **Disc slots**
㉓ **Disc slot for single disc play (SINGLE)**
㉔ **Loader carriage**
㉕ **Slot numbers**

■ Setting / Removing Discs



How to set discs A

1 Pulling gently from both ends, open the front panel.

Caution

- Except when setting or removing discs, keep hands out of the changer while open. You could injure yourself if somehow entangled in the internal mechanism.
- Keep cassette tapes away from the magnetic latches.

2 Slide the loader carriage to the desired slot No. to insert a disc.

Note

Slot No. 0 (SINGLE) is reserved for single disc play.

3 Set the disc on the loader and flip the loader upwards.

Caution

- Do not use 3" (8 cm) discs fitted with expander rings. Expander rings could damage the disc slots.
- Do not use cleaning discs or warped discs. All of these could damage your changer.
- Do not use discs with poorly attached labels or stickers. Adhesive protruding from peeled off stickers can cause the changer to malfunction.
- Do not put anything other than discs in the changer.
- Do not use irregular shape CDs (heart-shape, octagonal, etc.).

4 Close the front panel gently.

Note

If you leave the front panel open while a disc is in play, when the disc is over, the changer will stop.

How to remove discs B

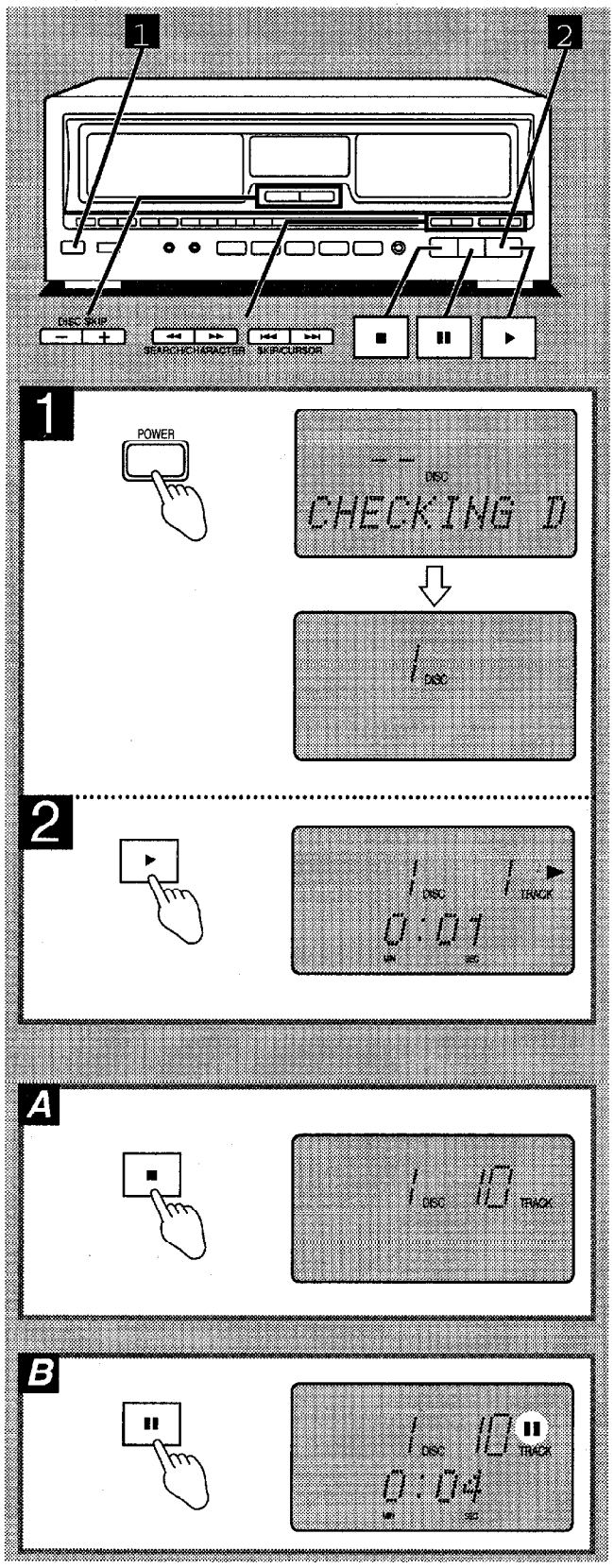
1. **Open the front panel.**
2. **Slide the loader carriage to the slot you want.**
3. **Press the eject button on the loader carriage.**

Special notes

You can set discs in the slots and remove them too, while playing discs.

- Do not set a disc in the slot of the disc being played (slot flashes). The disc in play is returned to its slot when finished. If two discs somehow jam in a slot, one or both could be damaged. When this happens, the message "TAKE OUT" will appear on the display. Remove the disc that doesn't belong in the slot and press the stop button.
- Do not open the front panel while the changer is changing discs.
- Sometimes the front panel cannot be opened while a disc is playing. It is a question of time. In such case, wait until you can open it.

■ Basic Operations



Sequential play

The changer plays all the tracks on all the discs in order and stops automatically when the last track on the last disc finishes playing.

Before starting, load your discs.

1 **Press POWER.**
The unit will switch on.
Momentarily, the message "CHECKING DISCS" will appear on the display.
When it goes out, the last disc played will be displayed.

2 **Press ▶.**
Play will begin.

The "▶" indication will illuminate.
The disc number, the track number and the elapsed play time will be displayed.
The disc number is the same as the slot number.

To search for the desired position	◀◀ ▶▶ SEARCH/CHARACTER
To skip tracks	⏮ ⏭ SKIP/CURSOR
To skip discs	DISC SKIP − +

To stop play A

Press ■.
The disc number and the total number of tracks of the current disc will be displayed.

The total playing time displayed includes the silent sections between tracks. For this reason, it may be a few seconds longer than the playing time indicated on the disc.
When you open the front panel, the total number of tracks and the total playing time go out.

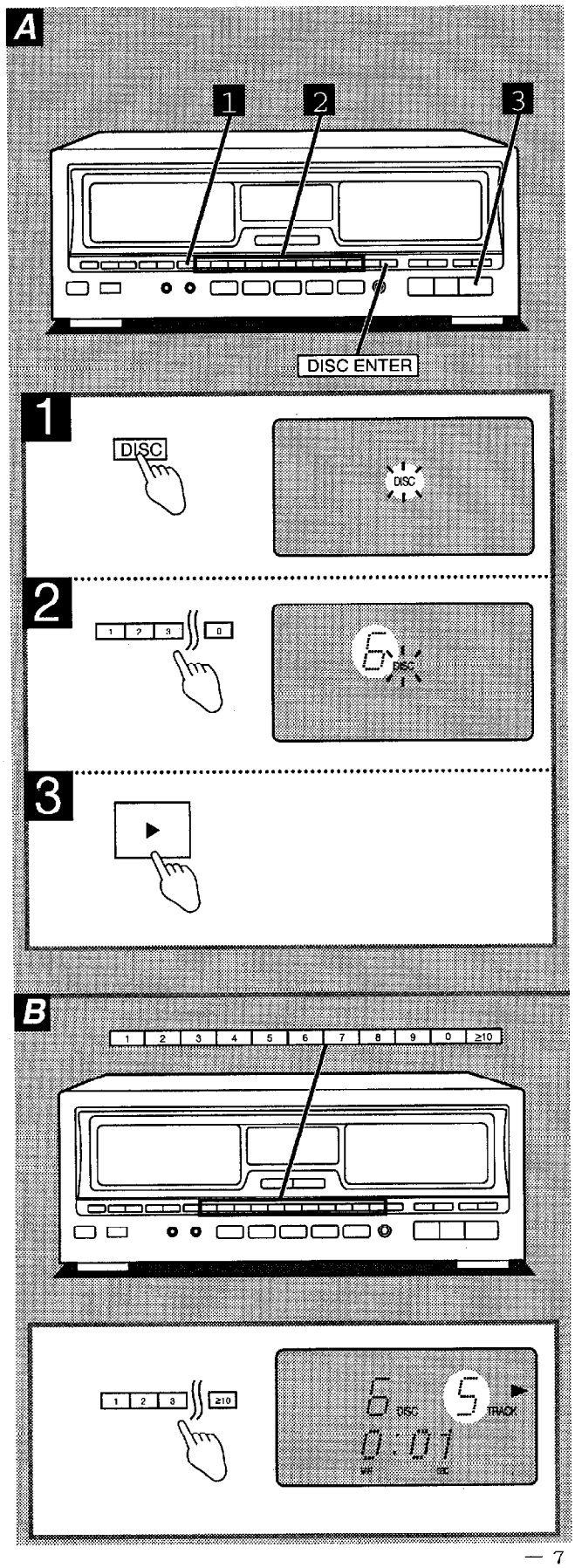
Press ▶ to re-start play.

Note
It takes roughly 3 seconds from the time you press ■ until the disc is returned to the slot.

To temporarily stop play B

Press ❚❚.

Press ▶ to resume play.



To directly access a specific disc A

1 **Press DISC.**

2 [Within 7 seconds]
Select the disc you want with the numeric buttons.

To select a disc from 1 to 9
For example: "6"
[6]
To select a disc from 10 to 110
For example: "19"
[1] → [9]
Push the buttons within 7 seconds of each other.

Note
When selecting discs, the ≥10 button does not respond to touch.

3 [Within 7 seconds]
Press ▶.
The changer will start playing the selected disc from the first track.

For your reference
- If you press DISC ENTER instead of ▶ to select a disc, the disc number will be displayed but play will not start automatically.
- When in the stop mode, if you select an empty slot, the message "NO DISC" will appear on the display.
- While a disc is playing, if you select an empty slot, the changer will automatically play the next disc available.
- If you select "0", the changer will switch to the single disc play mode.

To directly access a specific track B

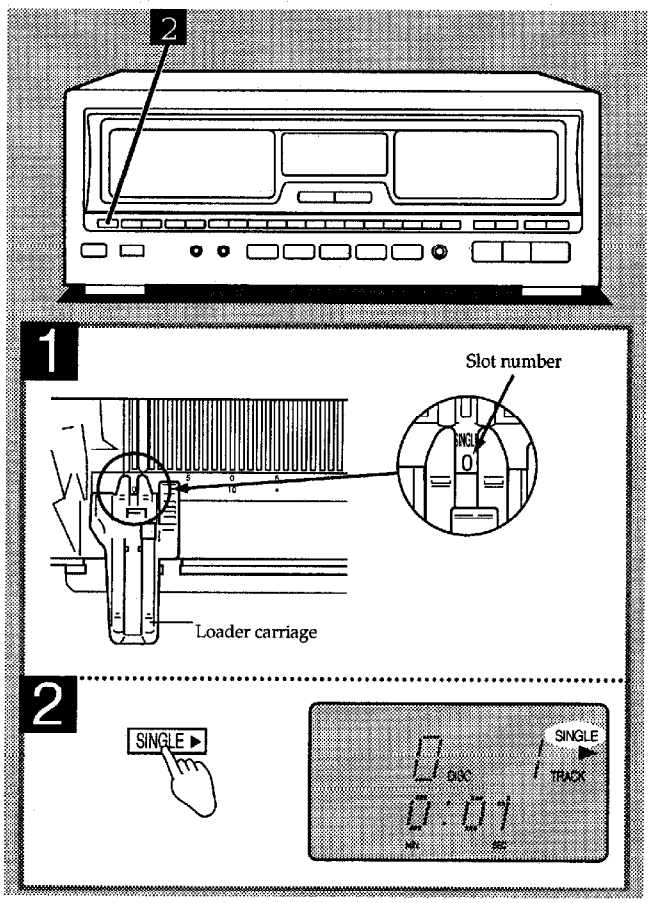
After selecting a disc, select a track with the numeric buttons.

Press the numeric button(s) to select the track.
Play will begin from the selected track.

To select a track from 1 to 9
For example: "6"
[6]

To select a two-digit track number 10 or higher
For example: "19"
[≥10] → [1] → [9]
Push the buttons within 7 seconds of each other.

■ Single Disc Play



Single disc play is convenient when wanting to playback a specific disc right away, without going through the usual selection procedure, for example, to listen to a disc you just bought.

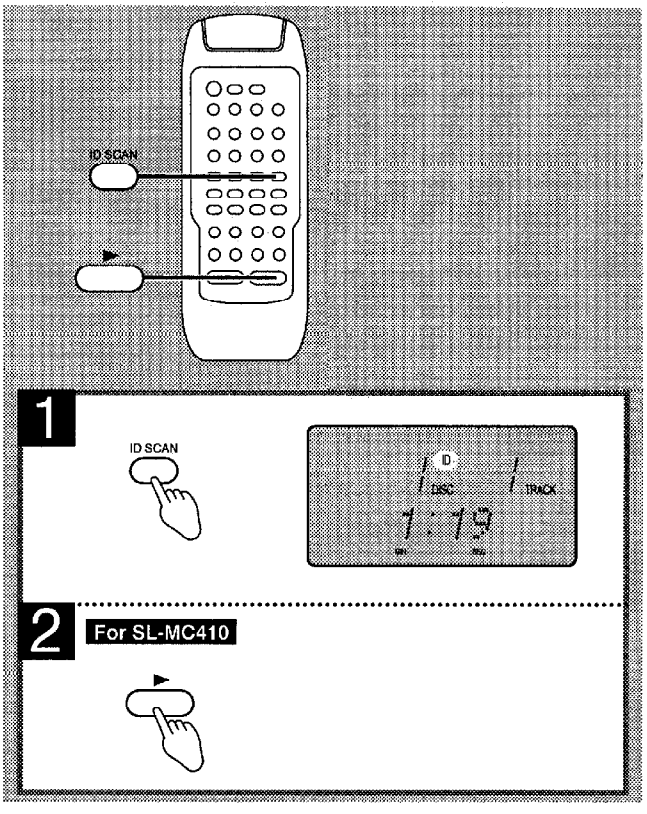
1 **Open the front panel, and set the disc in the slot No. 0.**
Face the disc label to the right and flip the loader upwards to set the disc.

2 **Close the front panel and press SINGLE ▶.**

The changer plays all the tracks in order and stops automatically when the last track finishes playing.

To cancel single disc play mode

- Select another disc with the numeric buttons.
- Skip to another disc with DISK SKIP (– or +).
- Select a group.



(Only available from the remote control.)

This function is convenient to use when searching for a desired track.
The function will search from the beginning of the track for a loud section, and will play 10 seconds of the track centering around that point.
The order of scanning is the same as for play mode.

1 **Press ID SCAN.**
ID scan will start.

2 [When the desired track has been found]
Press ▶.
The changer will play the track from the beginning.

To cancel ID scan

Press ID SCAN while this function is in operation.
The "ID" indicator will go out.

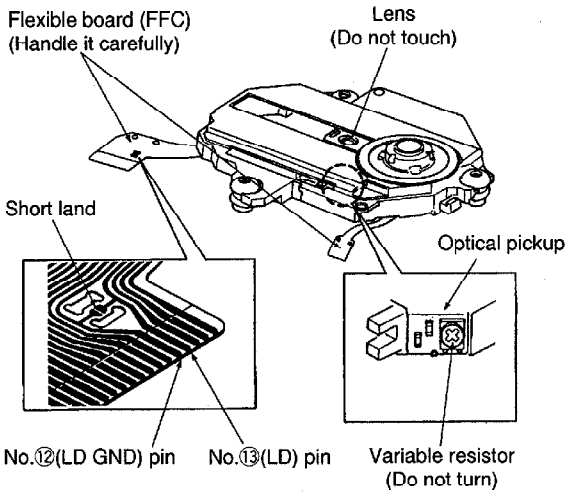
The changer will continue to play from the track being played.

■ Handling Precautions for Traverse Deck

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.
So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

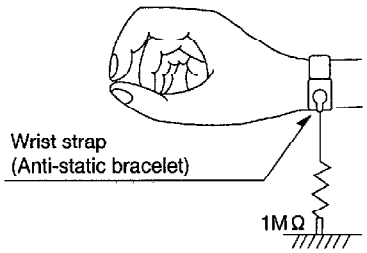
• Handling of traverse deck (optical pickup)

1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. The short land between the No.⑫ (LD GND) and No. ⑬ (LD) pins on the flexible board (FFC) is shorted with a solder build-up to prevent damage to the laser diode.
   To connect to the PC board, be sure to open by removing the solder build-up, and finish the work quickly.
3. Take care not to apply excessive stress to the flexible board (FFC).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

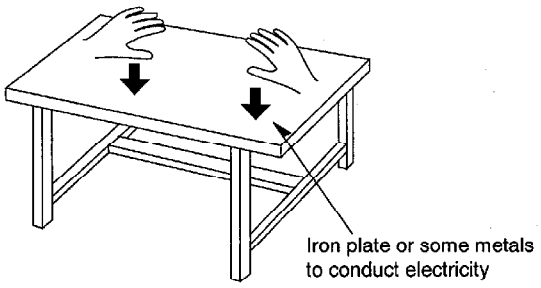


• Grounding for electrostatic breakdown prevention

1. Human body grounding
   Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
   Put a conductive material (sheet) or steel sheet on the area where the optical pickup is placed, and ground the sheet.

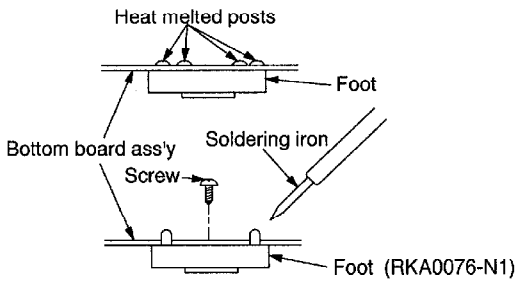


Caution:
The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).



■ REPLACEMENT OF THE FOOT

1. Remove the 4 heat melted posts on the Bottom board ass'y with a pair of nippers or similar tool.
2. To replace the foot (RKA0053-A) on the Bottom board ass'y melt the 4 posts with a soldering iron or install it with a screw (XTB3+6J).



■ Self-Diagnosis Mode

Self-diagnosis mode list

Mode	Procedure	Content	Use	Page
FL display mode	Turn ON power button with no disc loaded. ↓ Press the following 3 buttons simultaneously: PLAY(►),STOP(■),TRACK SKIP(⏮) ↓ FL all unlit ↓ Press DISC button ↓ Press specified button ↓ FL all lit	FL all unlit / all lit	Enables checking of whether FL and each SW are okay or not, before set disassembly.	P11
Mechanical mode	Turn ON power button with no disc loaded. ↓ Hold down the STOP (■) button for at least 2 seconds. ↓ Simultaneously press the TRACK SKIP (⏭) button for at least 2 seconds,while holding down the STOP (■) button. ↓ C (Appears on display)	Displays defective points while performing a series of mechanism operations. C F-15: PU rest SW etc. C F-27: Slide drive system C F-28/ C F-29: Loading system F26: Main IC defect (Automatically displayed when power is turned ON, regardless of mode setting.)	Enables fault to be diagnosed, before set disassembly.	P12 ~ P14
Test mode	Turn OFF power button once, with no disc loaded. ↓ Turn ON power while simultaneously holding down the following button: PLAY(►), STOP(■) ↓ TEST MODE (Appears on display) → Press **A** button → Press **B** button Mount disc in single (slot 0) position. → Press **C** button	**A** button: Results in independent operation of traverse deck.	Use to check correct operation after disassembly.	P15
		B button: Repeats loading / unloading operation.	Use to check correct operation after repair.	P16
		C button: Automatically repeats loading / unloading / slide operation.		P17
Servo adjustment mode	After mounting disc in slot, turn OFF power button once. ↓ Turn ON power while simultaneously pressing the following three buttons: PLAY(►),PAUSE(❚❚),STOP(■) ↓ Press the PLAY(►) button.	Displays servo circuit status on FL. 	Enables checking of servo status. * F = Focus servo * T = Tracking servo * C = CLV servo	P18 • P19

Before set disassembly

Before set disassembly, perform **Self-diagnosis** (FL display mode and Mechanical mode) and **CD basic operation checking**, and develope an idea of the cause of the problem.

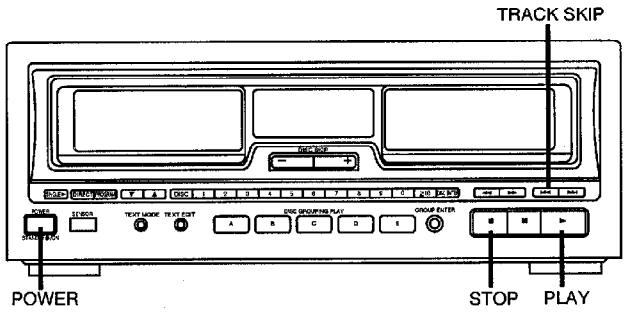
Self-diagnosis FL display mode

FL all unlit test

Press POWER with no disc loaded.

Press STOP(■),PLAY(▶),TRACK SKIP(⏮) simultaneously.

FL is all unlit.

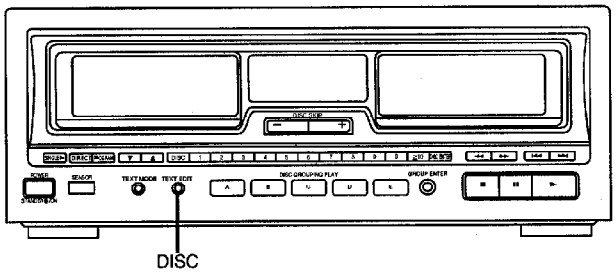


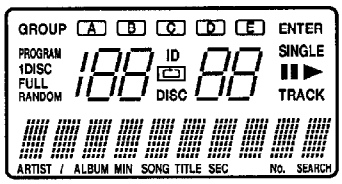
Previous display remains unchanged:
* Check switches(■ , ▶ , ⏮).
Characters remain displayed:
* Check the grid of the characters.

FL all lit test

Press DISC (FL remains all unlit)

Press all buttons except STOP(■), PAUSE(▮▮), PLAY(▶), SEARCH(◀◀ , ▶▶), DISC , DISC ENTER and POWER .





Result	Handling
All lit	Normal (Pressed button and FL normal)
All remain unlit	Check all buttons pressed above
Missing letters	Check grid of missing letters

Cancellation

- Press STOP(■) or turn OFF/ON power button.

Self-diagnosis Mechanical mode

Setting

Turn ON the power button with no disc loaded.

↓

Loading unit moves to the right and left, and system reverts to standby mode.

↓

Hold down the STOP(■) button for at least 2 seconds.

↓

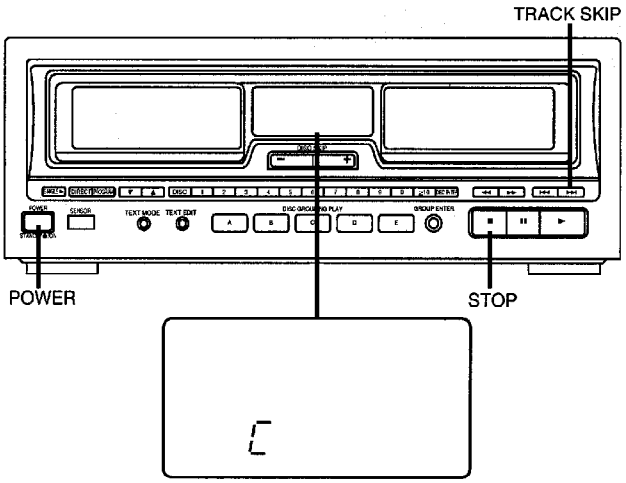
Simultaneously press the TRACK SKIP(▶▶I) button for at least 2 seconds, while holding down the STOP(■) button.

↓

"C" appears on display

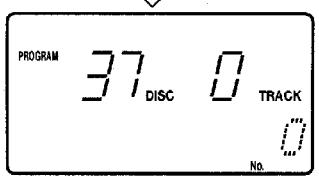
↓

Self-diagnosis starts automatically



Loading unit operation and display

		(Display)
OPU moves to rest position. YES / NO	Stops	C F-15
Moves to transport lock position. YES / NO	Stops	C F-27
Disc detection (Round trip, moving right to left) YES / NO	Stops	C F-27
Stop for 1 second at standby position. YES / NO	Stops	C F-27
Moves to slot No.15, loading operation. YES / NO	Stops	C F-27 or C F-28
Stop for 1 second in clamp state. YES / NO	Stops	C F-28
Unloading operation YES / NO	Stops	C F-29
Moves to transport lock position YES / NO	Stops	C F-27
Moves to standby position YES / NO	Stops	C F-27
Complete = Normal		



Cancellation

- Turn power button OFF/ON.

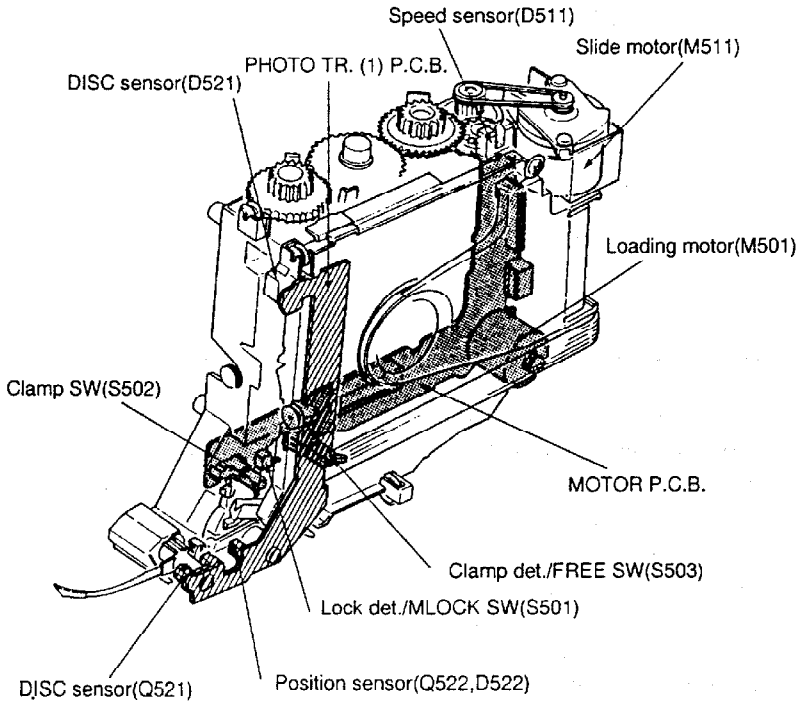
Self-diagnosis Mechanical mode

Display and handling

Display	Cause	Handling
F-15	The sympton is slow start-up of the CD when power is turned ON. The cause is defective contact of the OPU rest switch.	Abnormal rest detection switch (S701).
F-26 (Automatic display)	Sympton is that the unit does not operate when the play button is pressed, or the CD is skipping etc. The probable cause is defective system control IC. Lock det./MLOCK SW (S501) does not go ON/OFF in initial operation.	* Check system control (IC401) and servo IC (IC702). * Check each IC and the servo circuit. * Check Lock det./MLOCK SW (S501).
F-27	Sensor abnormal. Load on slide drive system is too great. Loading unit does not move to the right and left. Slide motor malfunction.	* Check slide motor (M511). * Check position sensor (Q522, D522) and speed sensor (D511). * Check gears of slide drive system. (Jammed by foreign matter or great teeth missing.)
F-28	Clamp det./FREE SW does not go OFF, and Clamp det.SW (S502) does not go ON within 5 seconds during loading.	* Check Clamp det./FREE SW (S503) and Clamp SW (S502). * Check loading motor (M501). * Check loading drive system. (Riding-up, shifting or foreign matter jamming of levers, missing gear teeth etc.)
F-29	Clamp det./FREE SW (S503) and clamp SW do not go ON within 5 seconds during unloading.	

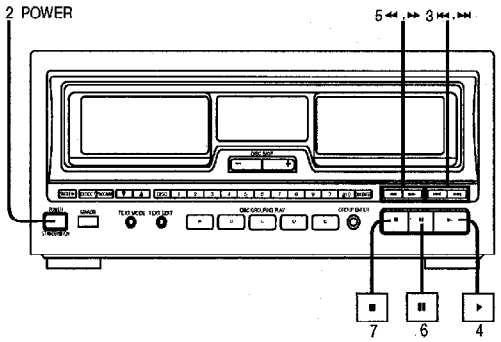
<Method for returning from error display to normal display>

* C F-26: When repair is complete, the error display disappears automatically.
* C F-15/ 27/ 28/ 29: Power SW ON/ OFF.



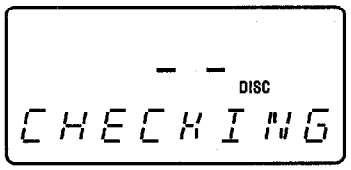
Ref. No.	Part name (Part number)
IC401	System control IC (UPD78043F019)
IC702	Servo processor IC (MN662740RM1)
S501	Lock det./MLOCK SW (RSP1A017-A)
S502	Clamp det. SW (RSH1A005)
S503	Clamp det./FREE SW (RSH1A005)
S701	Rest detection SW (RSM0006-P)
Q521	Disc sensor (PT4810F)
Q522	Position sensor (PT480F)
D511	Speed sensor (RSQGP1S53V)
D521	Disc sensor (LN66S)
D522	Position sensor (GL480V)
M501	Loading motor (RFKPLMC50PAK)
M511	Slide motor (RFKPLMC50PBK)

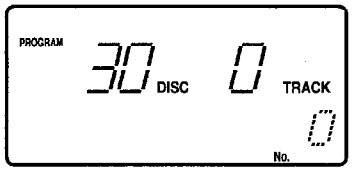
Check of basic CD operation



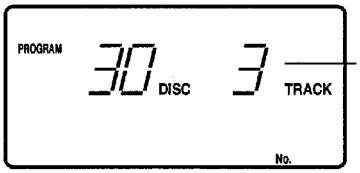
1 [With power supply OFF]
Place one disc in stocker. For example, place a disc in slot No.30.

2 POWER Press power
[CHECKING DISCS] scrolls across the display, and the number of the slot containing the disc is displayed.



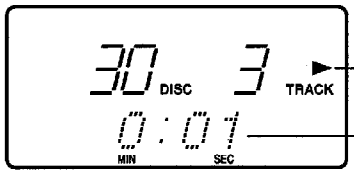


3 Press either (⏮ or ⏭) until you reach the desired track.
⏮ : You can skip backward.
⏭ : You can skip forward.



Track number at the playing position.

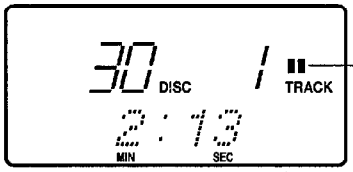
4 Press PLAY (►).



Play indicator
Elapsed play time

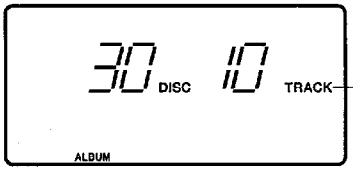
5 [In the play or pause mode]
Press and hold ◄◄ or ►►
◄◄ : you can search backward.
►► : You can search forward.

6 Press PAUSE (▮▮).



Illuminates

7 Press STOP (■).



Total number of t

Result	Handling
No abnormalities in any operation	In accordance with the buttons operated in Self-diagnosis: FL display mode , all operation buttons (32 buttons) except the DISC ENTER button are normal. Perform PROGRAM and other operation.
Fails to play or play performance is poor.	Perform servo adjustment mode (p18, 19).
Failure of operation other than play. (Example) Does not skip tracks.	Check between button which does not work and servo module. Check for FFC catching of the OPU. Check for bending of the traverse deck worm gear.

Self-diagnosis Test mode A

Setting

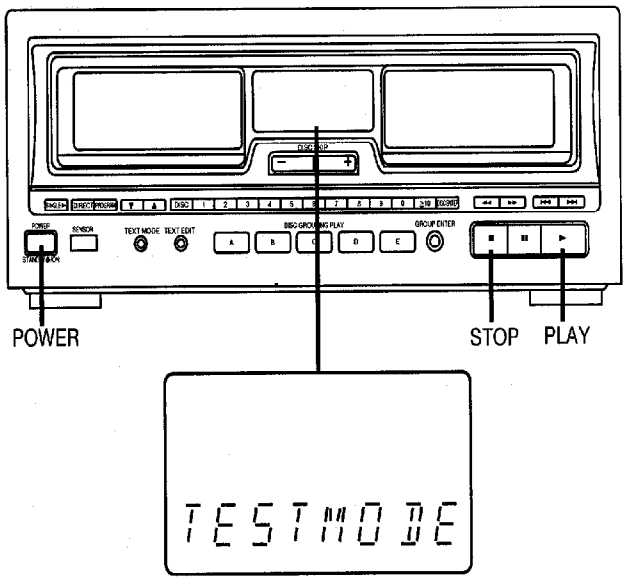
Turn OFF power button with no disc loaded.

↓

Turn ON power button while simultaneously pressing PLAY(►) button and STOP (■) button.

↓

"TEST MODE" appears on the display.

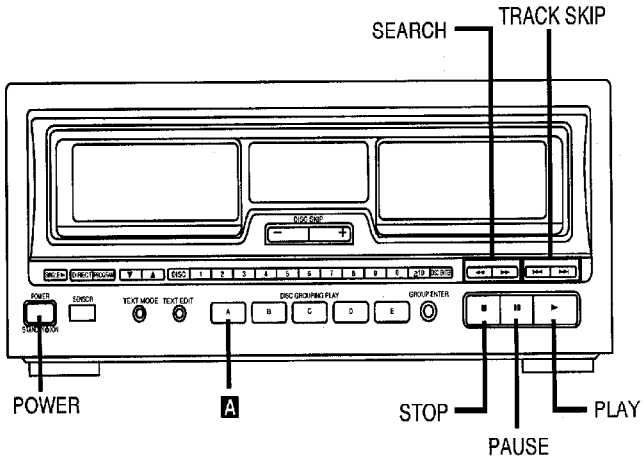


To independently operate the traverse deck,

Press the A button on the operation panel.

↓

The following buttons now work: PLAY (►), PAUSE (❚❚), STOP (■), SEARCH (◄◄ , ►►) and TRACK SKIP (|◄◄ , ►►|).



Cancellation

Turn the power button OFF/ON

Self-diagnosis Test mode B

To perform load and unload operations at the loading unit,

"TEST MODE" appears in the display.

Press the button B on the operation panel.

Has the loading unit been removed from the frame?

The slide motor spins for approx. 5 seconds.

Moves to transport lock position.

Moves to standby position.

Moves to slot No.15.

Loading operation

Stops for 1 second

Unloading operation

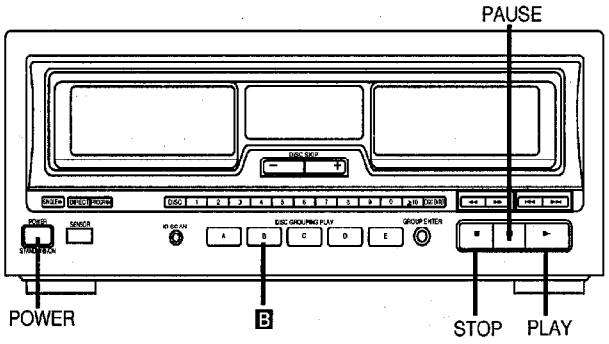
Stops for 1 second

This operation repeats until cancellation.

Setting the "TEST MODE"

Turn OFF power button with no disc loaded.

Turn ON power button while simultaneously pressing PLAY (►) button and STOP (■) button.



Cancellation

Turn the power button OFF/ON

Self-diagnosis Test mode C

To perform linked operation of the loading unit,

Setting the "TEST MODE"

Turn OFF power button with no disc loaded.

↓

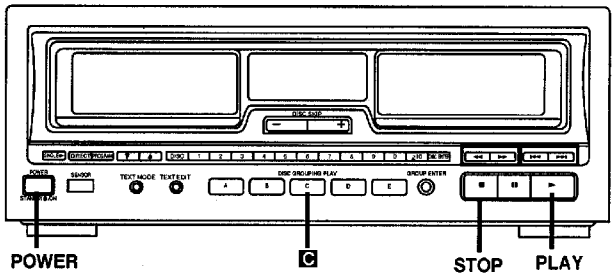
Turn ON power button while simultaneously pressing PLAY (►) button and STOP (■) button.

→ "TEST MODE" appears in the display.

Load disc at single (slot No.0) position.

↓

Press button C on the operation panel.



The follwing automatic operation begins.

↓

Starts the play the disc at slot No. 0 for a second, then stops the play.

↓

Moves one to the right (slot No.1).

↓

Unloads the disc to slot No.1.

↓

Loads the disc and plays for a second and stops.

↓

Moves one to the right (slot No.2)

↓

The same operation as above until slot No.110.

↓

Moves one to the left (slot No.109).

↓

The same operation as above until slot No.0.

Continue

Cancellation

* Turn power button OFF/ON.

Self-diagnosis Servo adjustment mode

This function shows the operating status of the servo system circuits (focus, tracking, CLV) on the FL display.
The results of automatic adjustment of the servo circuit are also displayed, using error codes.

Check when assembled

Load CD into stocker.

Turn OFF the power button.

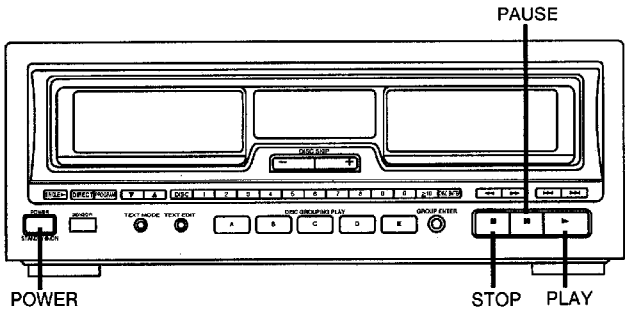
Turn ON the power button while simultaneously pressing STOP (■), PAUSE (▮▮) and PLAY (►).

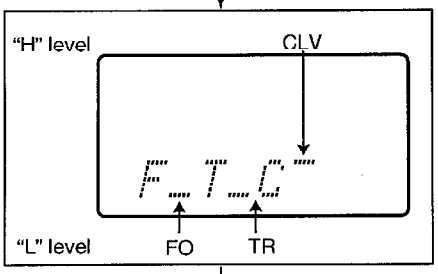
Check while disassembled

Set to S/M state.

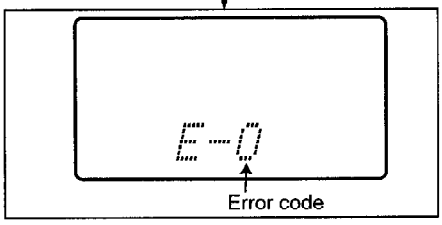
Perform " **To independently operate the traverse deck** " on p.15.

Press PLAY (►), and after playing for 10 seconds, press PAUSE (▮▮).



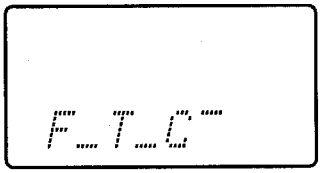


Press STOP (■).



Result	Handling
E - 00	Normal
Other display, (Example) E-1	Refer to p.19 to remedy.

How to read FTC.



= Normal

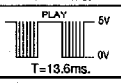
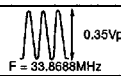
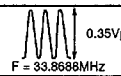
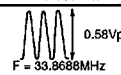
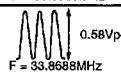
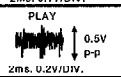
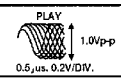
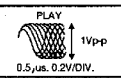
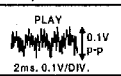
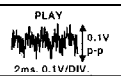
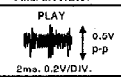
	"H" level	"L" level
F	FO system NG	FO system OK
T	TR system NG	TR system OK
C	CLV system OK	SP mortor NG

FO: Focus
TR: Tracking
CLV: CLV servo

●Error code based on troubleshooting

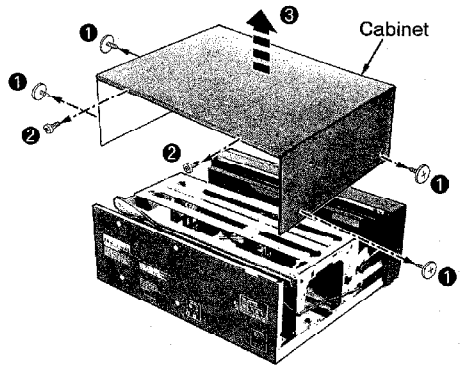
※ The unit is satisfactory if the error code is **E - 0** or **E - 2.**

※ Before testing, check that the test disc is free of scratches and optical pickup is clean.

FL error code display	Symptom	Probable cause	Signal to check		Normal voltage and waveform values	
			Signal name	Location	PLAY	STOP
E - 1	Focus and tracking offset adjustments not completed in the specified time period.	1. Clocks X1 and X2, power supply V_{DD} and reset/RST, all on IC702. 2. MDATA, MCLK, MLD and SENSE signal to/from mechanism controller.	MDATA	IC702 ⑧ pin		0V
			MCLK	IC702 ⑦ pin		4.9V
			MLD	IC702 ⑨ pin		4.9V
			SENSE	IC702 ⑩ pin	—	—
			/RST	IC702 ⑱ pin	4.8V	4.8V
			X1	IC702 ⑤⑧ pin		
			X2	IC702 ⑤⑨ pin		
E - 3 E - 5 E - 7 E - 9 E - B E - D E - F	Disc play unstable.	1. Scratches or contaminants on disc surface. 2. Focus and tracking servo circuits (check waveforms, voltages, and part values.) 3. Spindle driver circuit. 4. Optical pickup.	FE	IC702 ③② pin		2.4V
			TE	IC702 ③③ pin		2.4V
			FOD	IC702 ②⑧ pin	2.4V	2.4V
			TRD	IC702 ②⑦ pin	2.4V	2.4V
			KICK	IC702 ②⑥ pin	2.4V	2.4V
			/FLOCK	IC702 ⑪ pin	—	—
			/RF DET	IC702 ③⑧ pin	0V	4.8V
			RF	TJ701		2.4V
			STAT	IC702 ⑰ pin	4.8V	0V
E - 4 E - 6 E - C E - E	Best "Eye" (PD Balance) adjustment not completed in the specified time period.	1. Scratches or contaminants on disc surface. 2. Focus and Tracking servo circuit (check waveforms, voltages, and part values.) 3. Optical pickup.	FBAL	IC702 ③⓪ pin	2.4V	2.4V
			RF	TJ701		2.4V
			FE	IC702 ③② pin		2.4V
			/TLOCK	IC702 ⑫ pin	—	—
			OFT	IC702 ③⑥ pin	0V	0V
E - 8 E - A	Focus or Tracking gain adjustment not completed in the specified time period.	1. Scratches or contaminants on disc surface. 2. Focus and Tracking servo circuit (check waveforms, voltages, and part values.) 3. Optical pickup.	FE	IC702 ③② pin		2.4V
			TE	IC702 ③③ pin		2.4V
			/TLOCK	IC702 ⑫ pin	—	—
			OFT	IC702 ③⑥ pin	0V	0V

DISASSEMBLY/OPERATION CHECKS/REASSEMBLY PROCEDURES

■ COMMON • • • • • ITEMS FOR EACH PROCEDURE



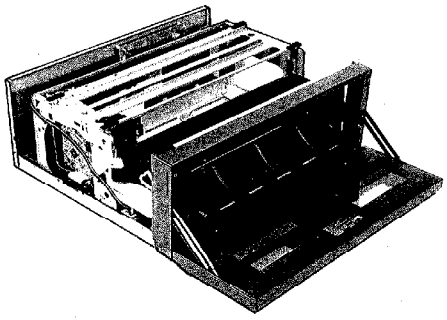
❶, ❷ Remove the 6 screws.

❸ Remove the cabinet.

※ The numbers reversed in white indicate the order of procedures.

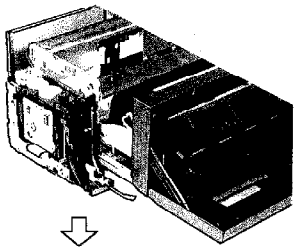
■ PRIOR TO THE OPERATION CHECKS

The following DISASSEMBLY/OPERATION CHECKS/REASSEMBLY procedures consist of 3 main items.
Follow the appropriate procedures to the failed block.

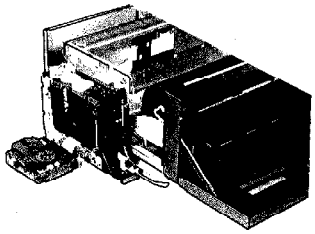


• Each block are described in order to the followings. DISASSEMBLY
➡ OPERATION CHECK
➡ REASSEMBLY

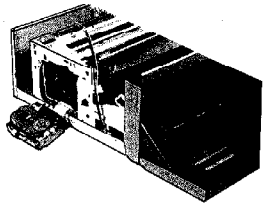
Act.1 ⇨ Loading unit (☞Refer to pages 22~29)



Traverse deck separation (☞Refer to pages 30~33)



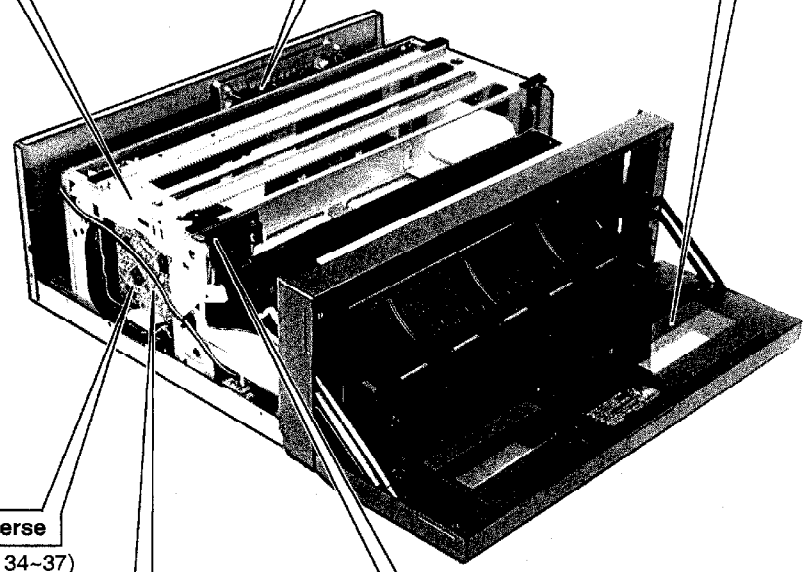
Act.2 ⇨ Traverse deck (☞Refer to pages 34~37)



Act.3 ⇨ Front panel (☞Refer to page 38)

Main P.C.B. (☞Refer to page 39)

■ Repair Guide



Removal for loading unit
(☞Refer to pages 22~29)
⬇
Traverse deck separation
(☞Refer to pages 30~33)

Removal for main P.C.B.
(☞Refer to page 39)

Removal for front panel
(☞Refer to page 38)

Removal for traverse
(☞Refer to pages 34~37)

Servo module diagnosis
- Mechanical mode setting (☞Refer to pages 12~14)
- Servo adjustment mode (☞Refer to pages 18,19)

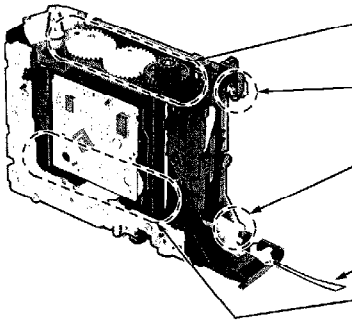
Operation checks for loading
- Mechanical mode setting (☞Refer to pages 12~14)
- Servo adjustment mode (☞Refer to pages 18,19)

Precaution
- Handling of the loading unit (☞Refer to pages 22)

Precaution

■ Handling of the loading unit

• During the loading unit disassembly/operation checks/reassembly, handle the following parts carefully .



Each travel gear

• Check each gear for rotating in assembly.

LED and Photo coupler

• Dust, incorrect position and etc.

Front feed lever

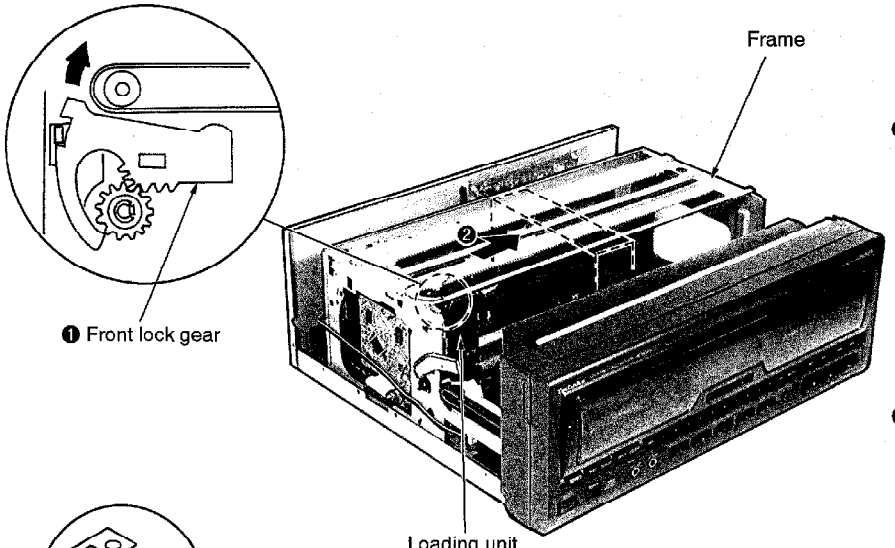
• Broken, deformation and etc.

Each loading gear

• Check each gear for rotating in assembly.

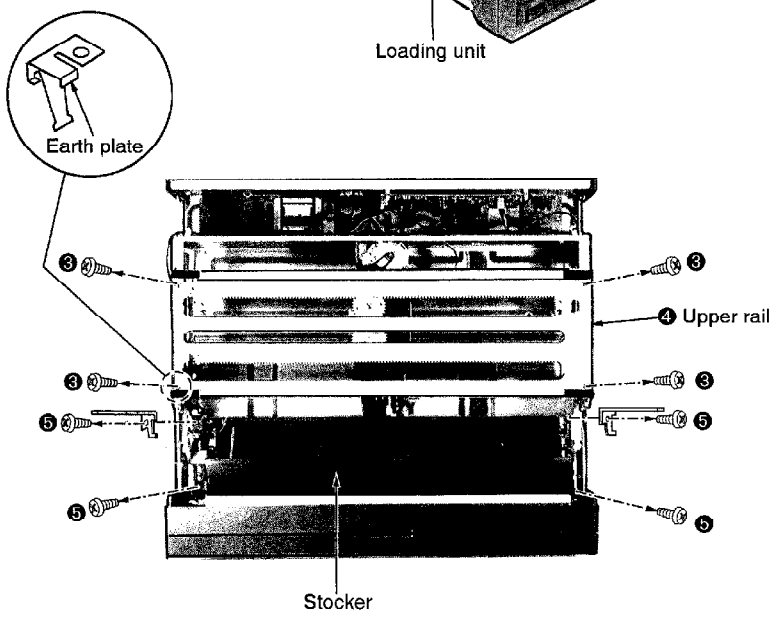
Act.1 Loading unit Disassembly

■ Handling of the loading unit



❶ Unlock the loading unit by moving the front lock gear manually in the direction of arrow.

❷ Move the loading unit manually in the right direction.
(Move the loading unit to the right direction beyond the center of the frame.)



❸ Remove the 4 screws for upper rail.

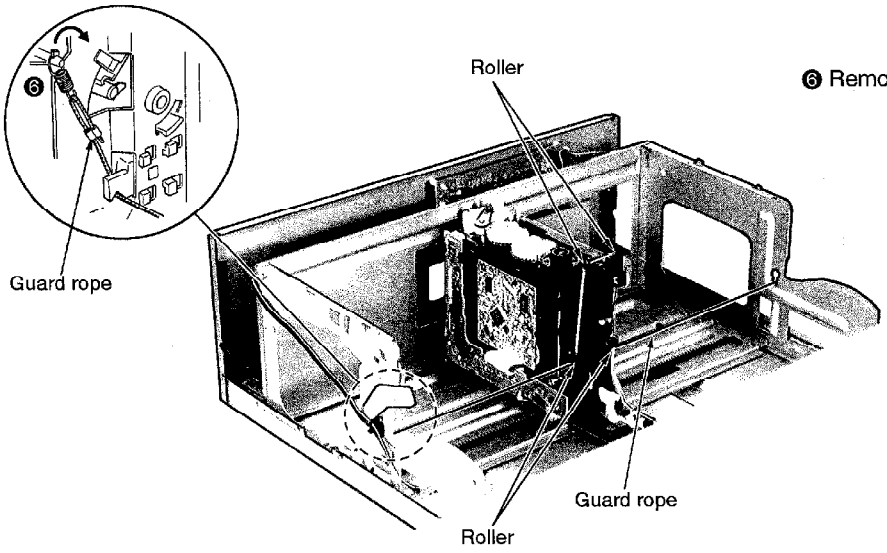
NOTE

When the upper rail is removed, the earth plate will also removed.

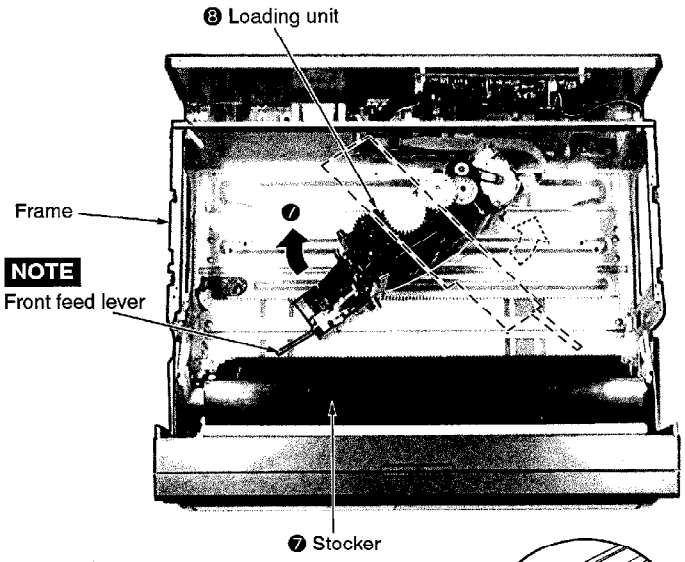
❹ Remove the upper rail.

❺ Remove the 4 screws for stocker.

Act.1 Loading unit Disassembly

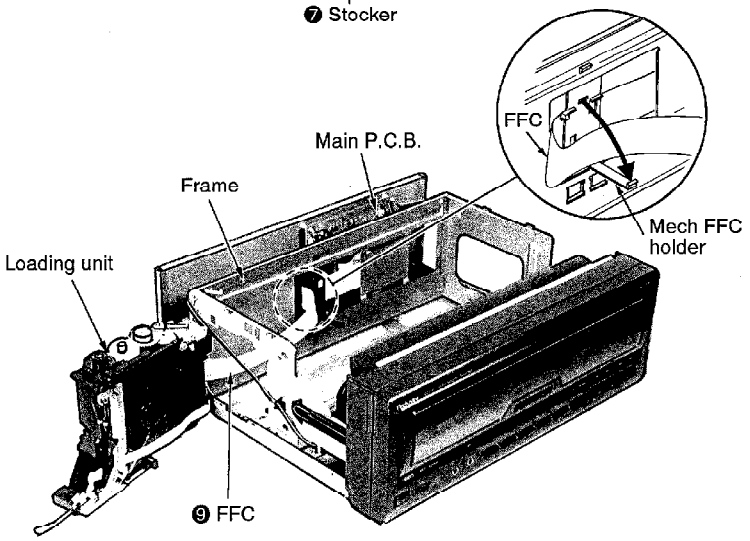


❻ Remove the guard rope.



NOTE
When removing the loading unit, make sure to avoid the front feed lever from the stocker and then, lift up the loading unit because the front feed lever is positioned under stocker.

❼ Rotate the loading unit to clockwise or counterclockwise with lifting the stocker and then,slide the front feed lever under the stocker.
❽ Remove the loading unit from frame.



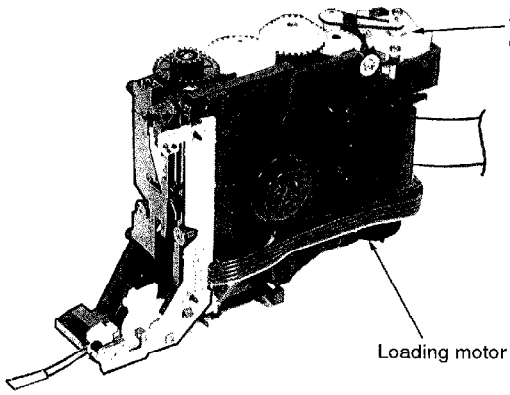
❾ Remove the mech FFC holder.

❿ Remove the FFC from loading unit. Then, reconnect the FFC to the loading unit through the opening of frame.

Preparation for operation checks is completed.

Act.1 Loading unit Operation checks

■ Test mode



※ This operation can be executed without traverse deck (including servo module).

❶ Set to the test mode and then, push the button B on front panel (☞Refer to page 16)
❷ The slide(right or left direction) motor rotates for approximate 20 seconds.
❸ Then, the loading motor rotates with repeating the following operation.

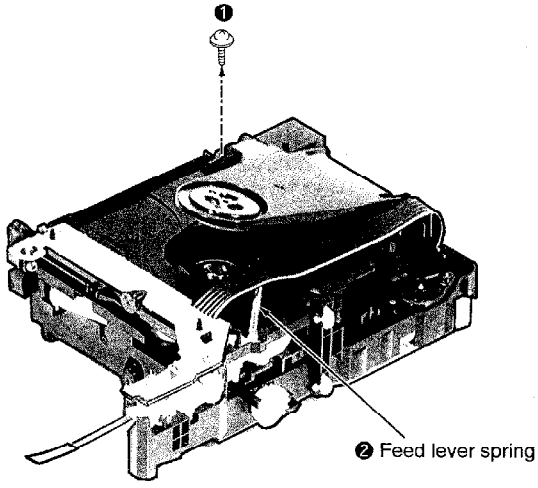
Load ➡ (Stop for 1 second) ➡ Unload ➡ (Stop for 1 second)

Make sure there are no unusual noise, binding or running over visually.

❹ To relieve the operation, set to the power off.

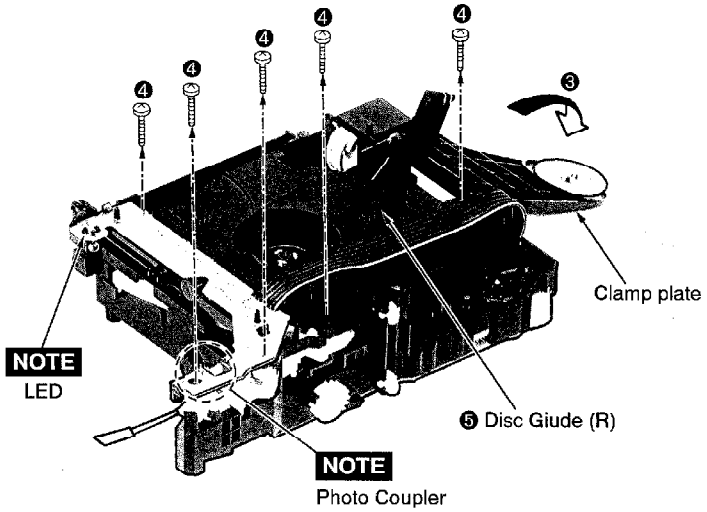
■ Manual operation

(For this operation, remove the parts described in "Test mode", and more the parts as follows.)



❶ Remove the 1 screw.

❷ Remove the feed lever spring.



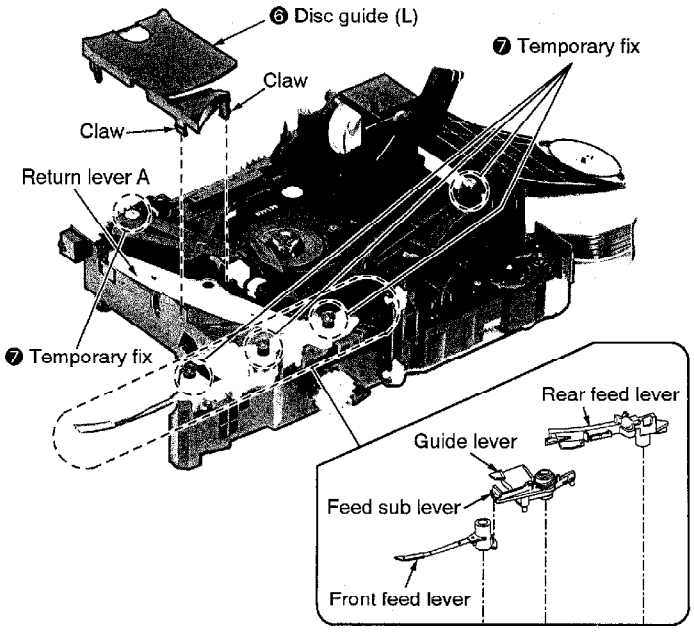
❸ Tilt the clamp plate backward.

❹ Remove the 5 screws.

❺ Remove the disc guide (R).

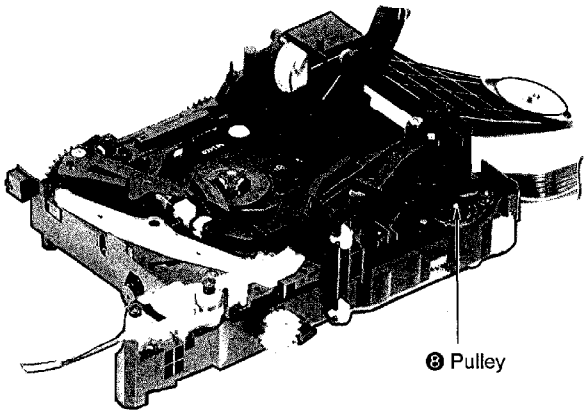
NOTE
Take care not to touch the LED or photo coupler by hand.

Act.1 Loading unit Operation checks



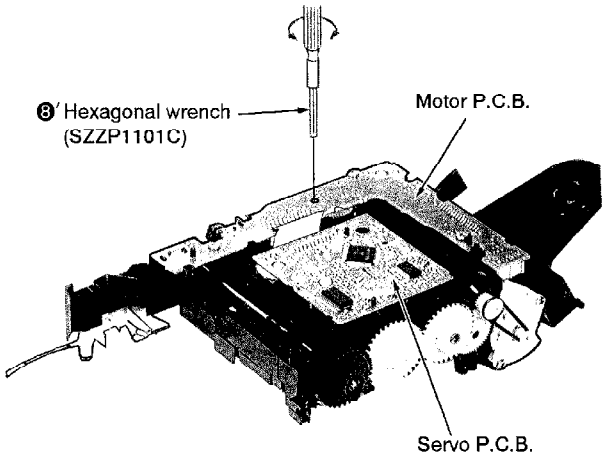
❻ Release the 2 claws and then, remove the disc guide (L).

❼ In this manual operation, the rear/front feed levers, guide lever ass'y, etc. may be removed because the disc guides(L/R) are removed already.
Tempoarary fix those levers with 5 screws.



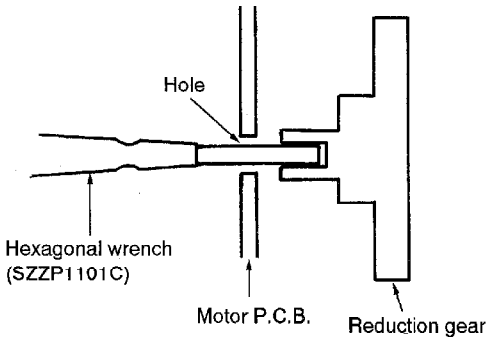
❽ In case of confirmation manually, rotate the pulley as shown left.

- Rotate clockwise : Loading operation
- Rotate counterclockwise : Unloading operation



❽′ Or rotate with 2 mm hexagonal wrench (SZZP1101C).

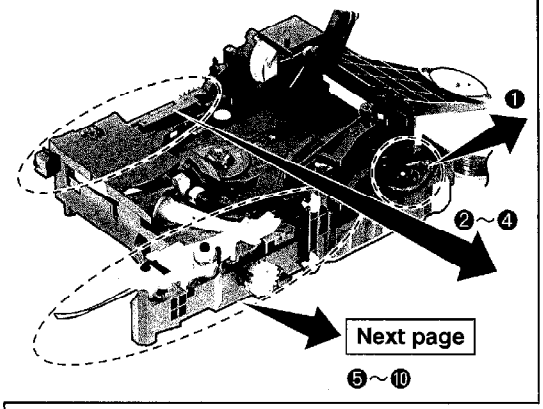
- Rotate clockwise : Unloading operation
- Rotate counterclockwise : Loading operation



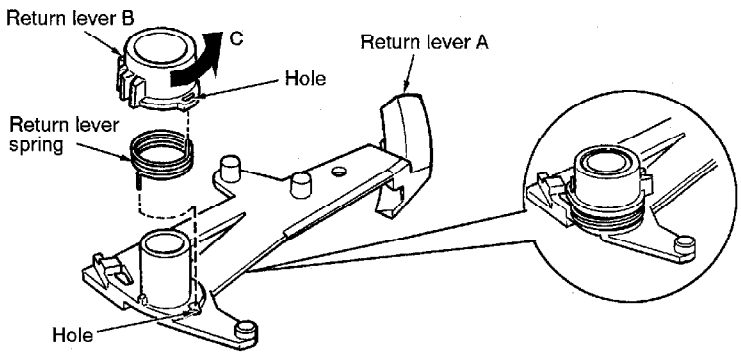
Act.1 Loading unit Reassembly

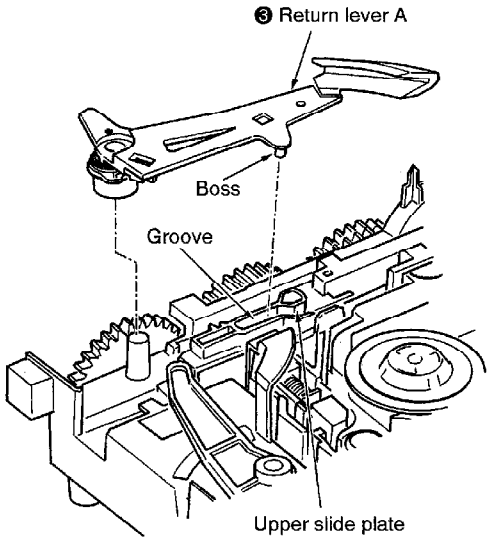
■ In Test mode ····· Follow the items ⑯ ~ ㉒.

■ In Manual operation ····· In case that the parts fixed temporary are removed, the perform the items ❶ ~ ⑩ and then, follow the items ⑪ ~ ㉒.



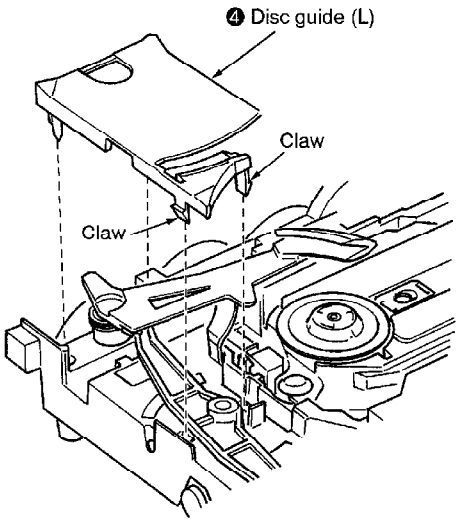
❶ Rotate the pulley clockwise fully.





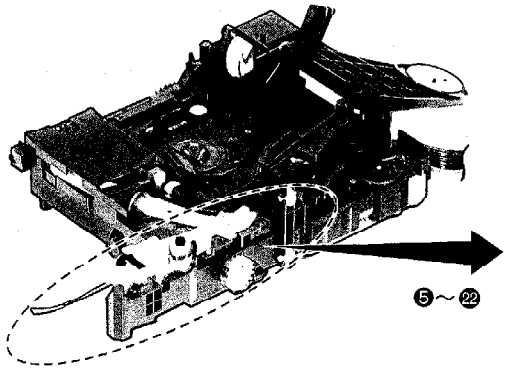
❷ Align the both ends of the spring with the holes of return lever A and B and then, install the return lelver A with rotating the return lever B in the direction of arrow (➡) C.

❸ Install the return lever A.
(Align the boss of return lever A with the groove of upper slide plate.)

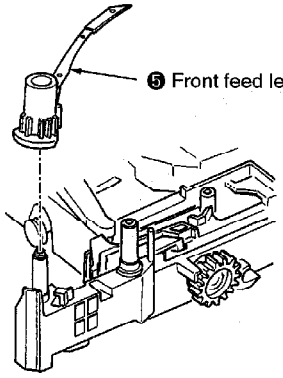


❹ Install the disc guide(L).
(Press the disc guide (L) untill the claws are hooked completely.)

Act.1 | Loading unit | Reassembly

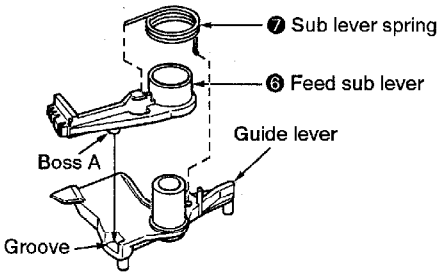


[The state of pulley rotated clockwise fully.]



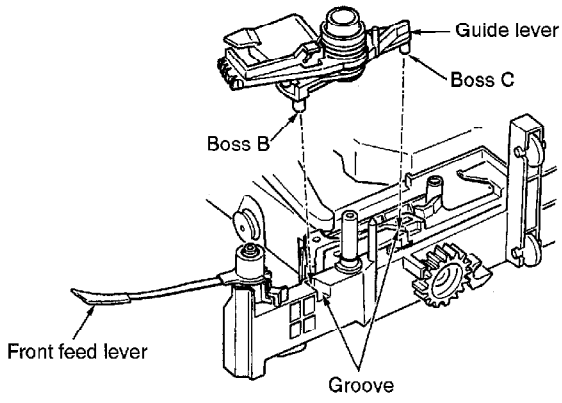
❺ Install the front feed lever.

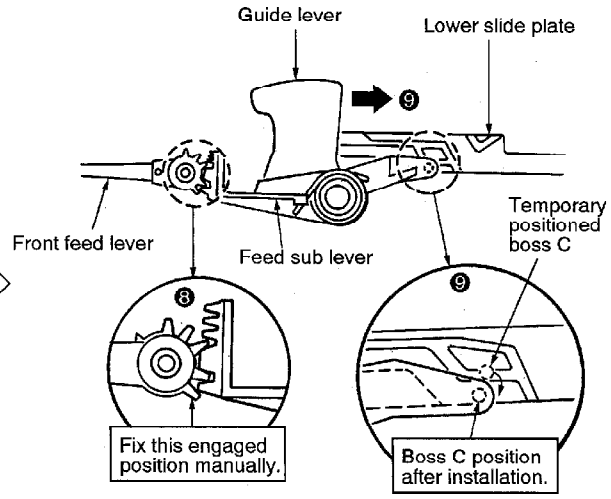
NOTE
Avoid the front feed lever to deform or bend.



❻ Install the feed sub laver to the guide lever.
- Align the boss A of feed sub lever with the groove of the guide lever.

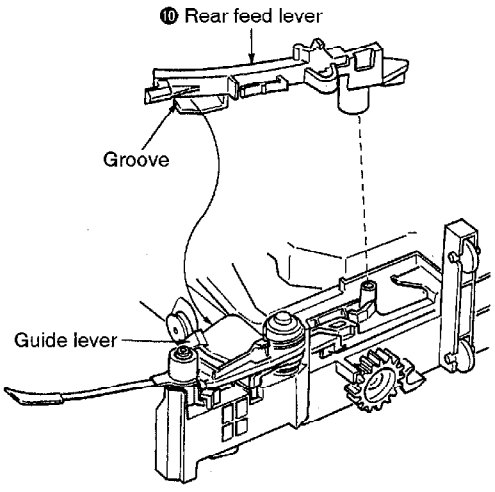
❼ Install the sub lever spring.





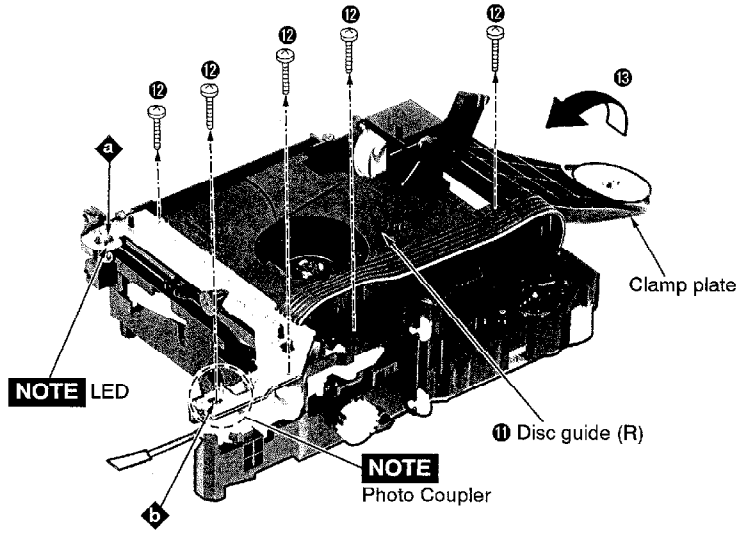
❽ Engage the gear of guide lever ass'y with the gear of front feed lever temporary.
- Boss B must be placed in the groove.
- Boss C must be run over the lower side plate.

❾ With fixing the gear by finger not to slip off the gear clench, rotate the guide lever in the direction of arrow.
- The boss C will fit in the groove.



❿ Install the rear feed lever.
(Align the guide lever with the groove of rear feed lever.)

Act.1 Loading unit Reassembly



⑪ Install the disc guide(R).

NOTE

Align the claw of disc guide with the slot ◆a◆.

⑫ Install the 5 screws.

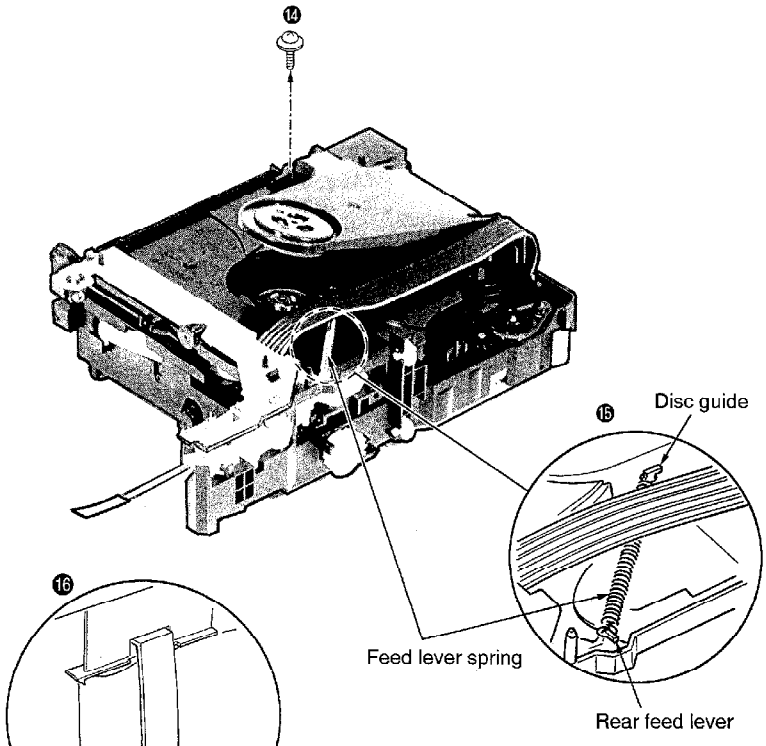
NOTE

Align the upper portion of boss inserted sensor holder with the slot ◆b◆, and then tighten screw.

⑬ Tilt the clamp plate forward.

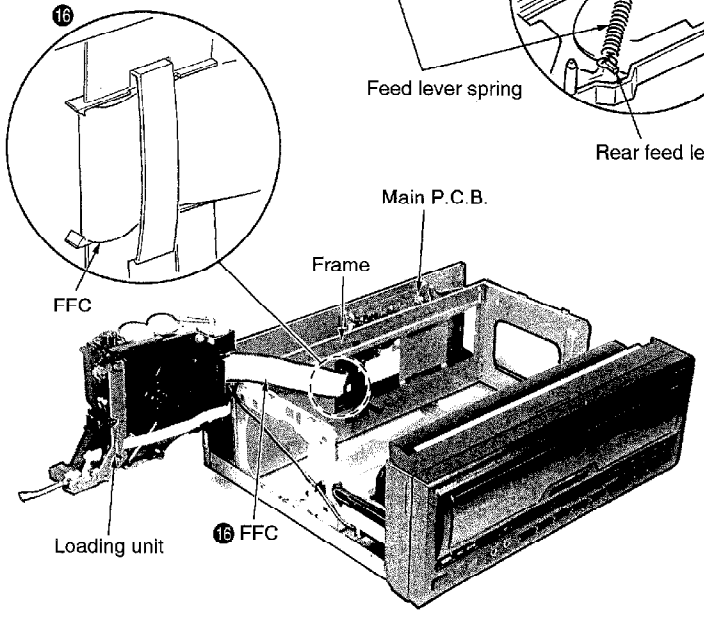
NOTE

Take care not to touch the LED or photo coupler by hand.



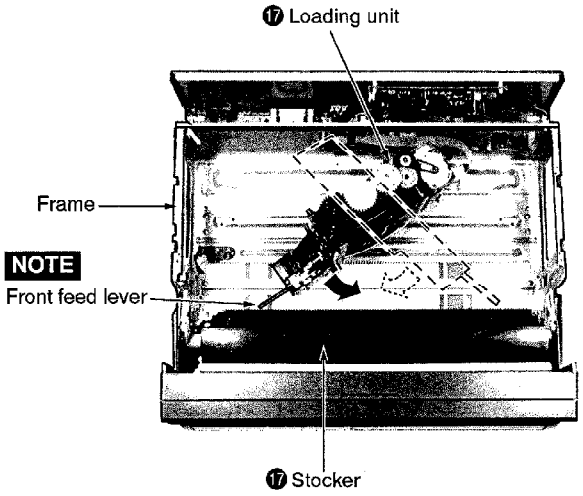
⑭ Install the 1 screw.

⑮ Install the feed lever spring.



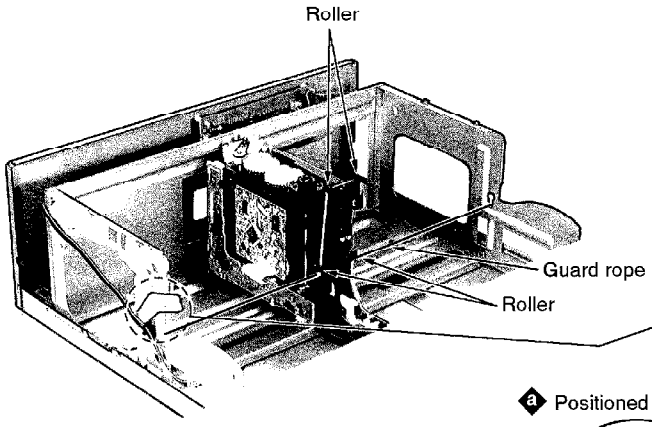
⑯ Remove the FFC from loading unit. Then, reconnect the FFC to the loading unit over the frame.

Act.1 | Loading unit | Reassembly

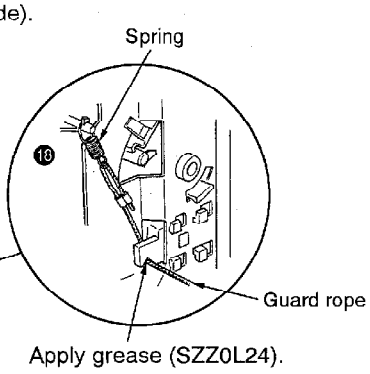


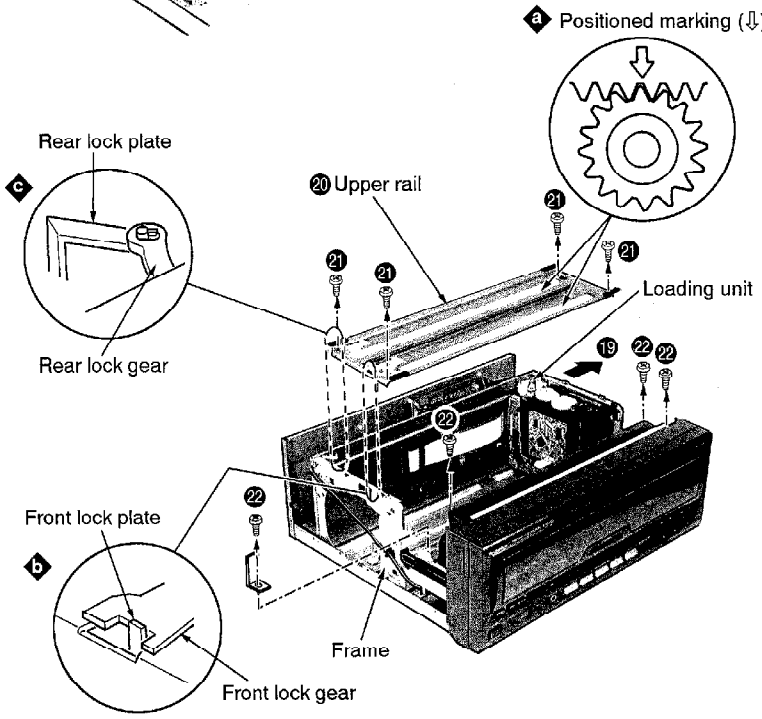
NOTE
When reassembling the loading unit, make sure to avoid the front feed lever from the stocker and then, install the loading unit because the front feed lever is positioned under stocker.

⓱ Rotate the loading unit counterclockwise or clockwise with lifting the stocker and then, place the front feed lever under the stocker.



⓲ Hang the guard rope with the spring side (left side).





⓳ Move the loading unit to the right end of frame.

⓴ Install the upper rail to the frame. Then, make sure to perform the following operations.

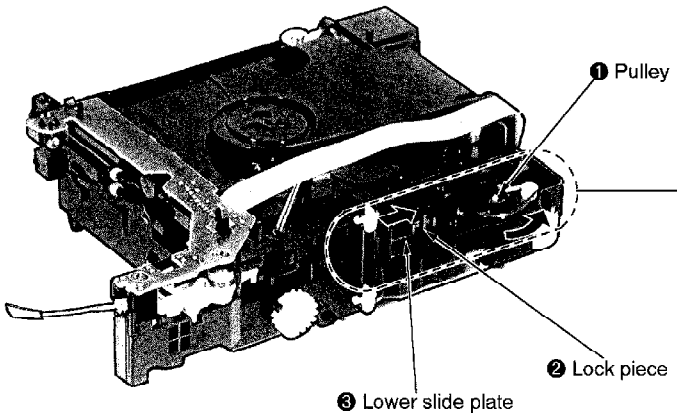
- ◆a Align the front travel gear and rear travel gear with the marked position of upper rail.
- ◆b Engage the front lock gear with the front lock plate.
- ◆c Engage the rear lock gear with the rear lock plate.

㉑ Install the 4 screws for upper rail.

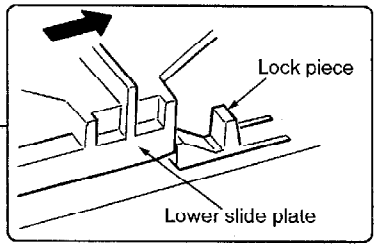
㉒ Install the 4 screws for stocker.

Act.1 Traverse deck separation Disassembly

The followings are described the procedures to make the traverse deck part from loading unit after removed the loading unit block from the frame.

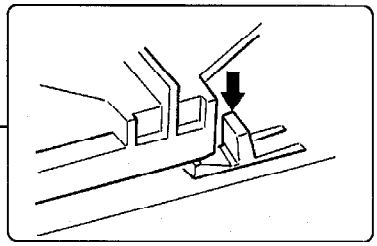


❶ Rotate the pulley counterclockwise.



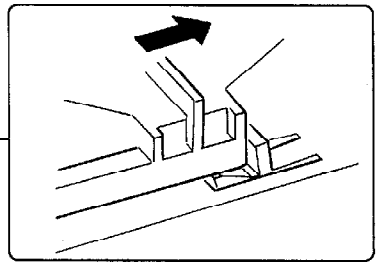
Rotate the pulley until the lower slide plate is moved in the direction of arrow and then touched to the lock piece.

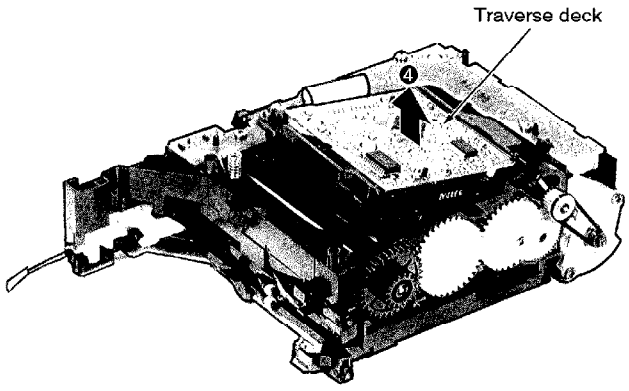
❷ Rotate the pulley counterclockwise fully with pressing the rib of lock piece.



The lower slide plate runs over the lock piece.

❸ Slide the lower slide plate manually in the direction of arrow until the lower slide plate touches the rib of lock piece

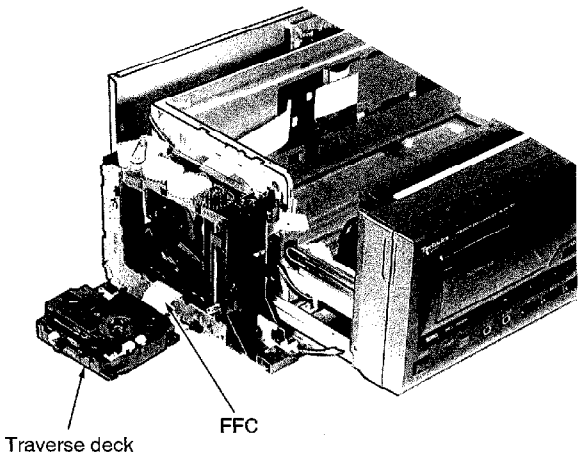




❹ Upset the loading unit and then, lift up the traverse deck.

Act.1 | Traverse deck separation | Operation check

■ Focus operation confirmation



❶ Set the switch to TEST MODE.
(☞Refer to page 15)

❷ Press the button **A** on the operation panel.

Standby the traverse deck to individual operation.

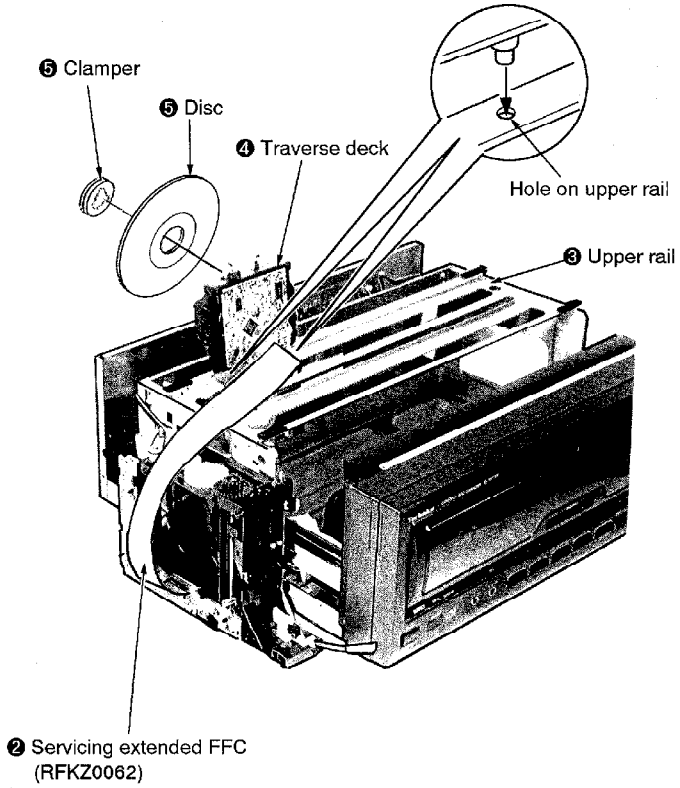
⇩

Press the PLAY(▶)button.

⇩

Confirm the focus operation visually.

■ Servo module confirmation



❶ Remove the FFC between the traverse deck and loading unit.

❷ Connect the servicing extended FFC between the traverse deck and loading unit.

❸ Install the upper rail.
(The screws are not necessary for fixing.)

❹ Locate the servo module faced to you and then, align the traverse deck with the hole on upper rail.

❺ Attach the disc to the clamper with magnet.

⇩

Preparation for operation checks is completed.

❻ Set the switch to TEST MODE.
(☞Refer to page 15)

❼ Press the button **A** on the operation panel.

⇩

Standby the traverse deck to individual operation.

⇩

Press the PLAY(▶)button.

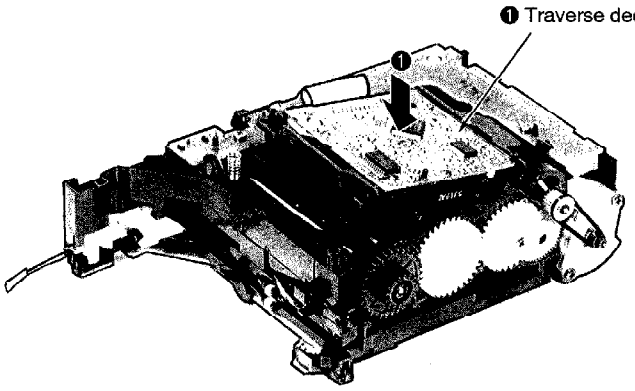
⇩

CD play starts.

⇩

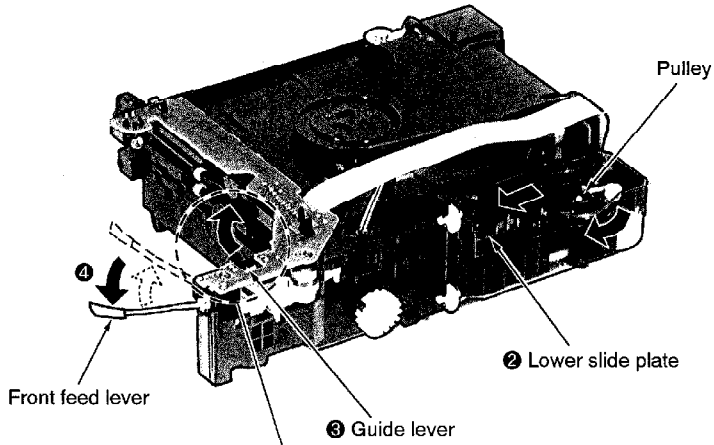
Check the servo module.

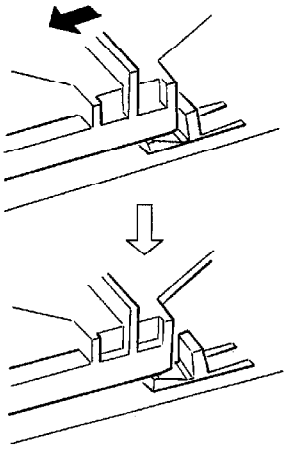
Act.1 | Traverse deck separation | Resassembly



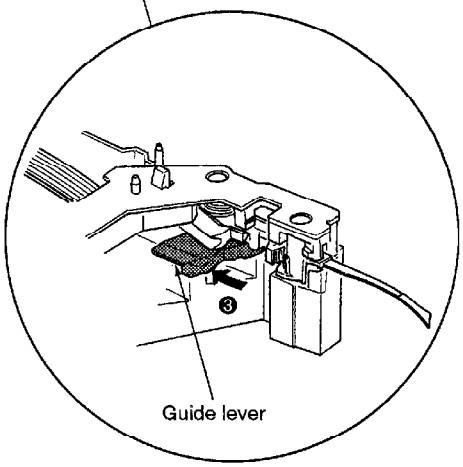
❶ Equip the traverse deck with the loading unit.

❷ Slide the lower slide plate in the direction of arrow with supporting manually not to be fall free the traverse deck.





The traverse deck will not fall free as shown above.



❸ While pushing the guide lever in the direction of arrow, rotate the pulley clockwise.

To easy installation loading unit into the frame, raotate the pulley fully clockwise.

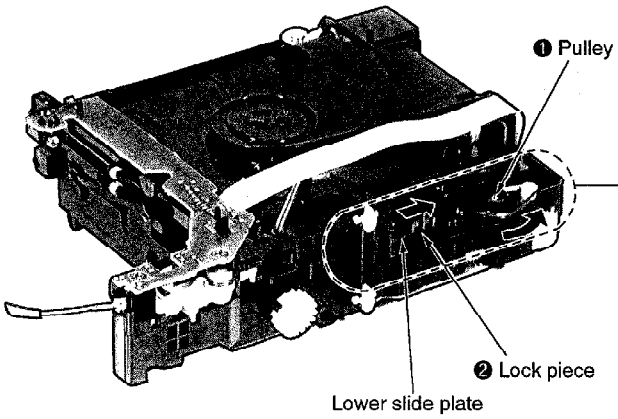
Confirmation

During the above operation , make sure that the front feed lever rotates to clockwise (Dot line) once and then, return to original position(Full line).

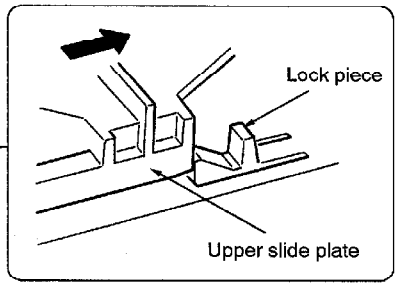
Act.1	Traverse deck separation	Reassembly

■ In case that the operations described in item "Confirmation" are not to be performed.

• In case that the operations described in item "confirmation" are not to be performed (The front feed lever will not return to original position (Full line) and is fixed at position indicated with dot line), perform the following operations.

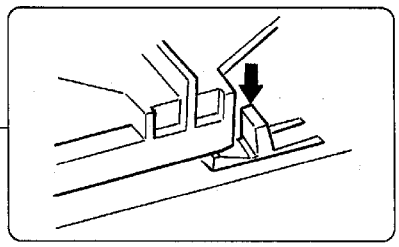


❶ Rotate the pulley counterclockwise.



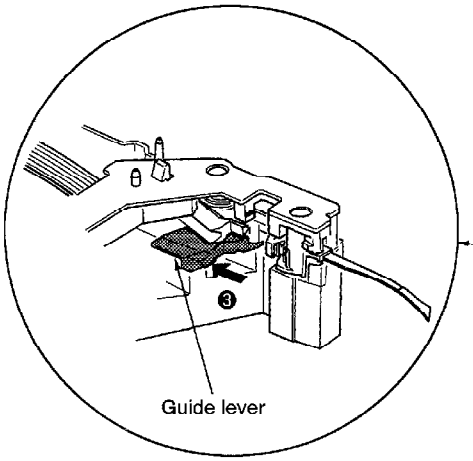
Rotate the pulley until the lower slide plate moves in the direction of arrow and touches the lock piece.

❷ With pushing the rib of lock piece, rotate the pulley counterclockwise fully.



The lower slide plate runs over the lock piece.

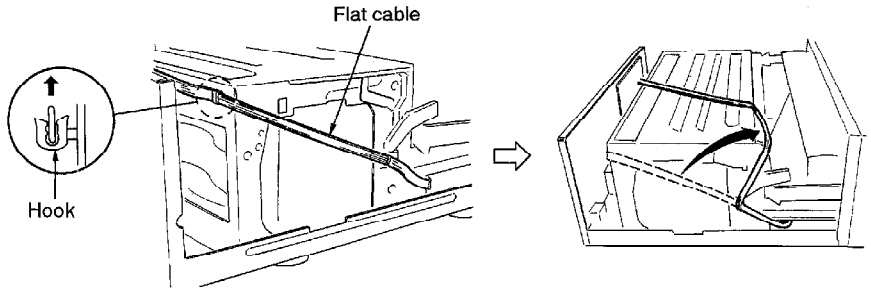
⇩



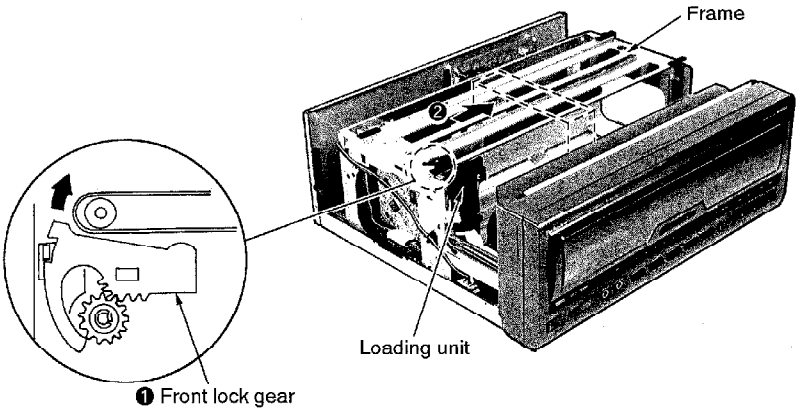
Rotate the pulley counterclockwise with pushing the guide lever as shown item ❸ on page.

Act.2 Independent traverse deck Disassembly

- The traverse deck can be removed individually without removal of loading unit.
- It is very convenient to perform the operation checks for traverse deck quickly.

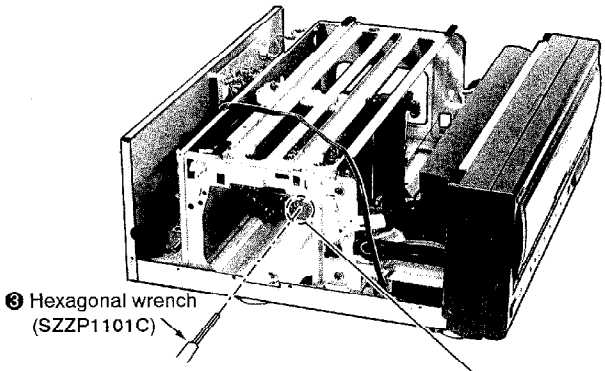


※ Release the flat cable from the hook and then, arrange it as shown right.

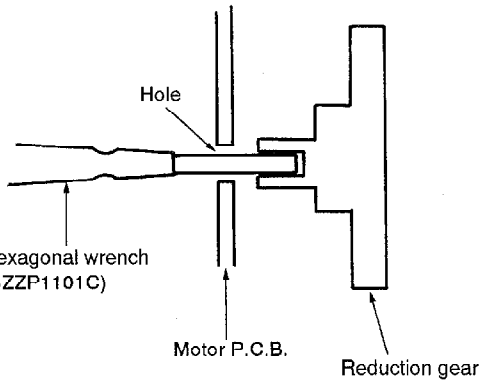


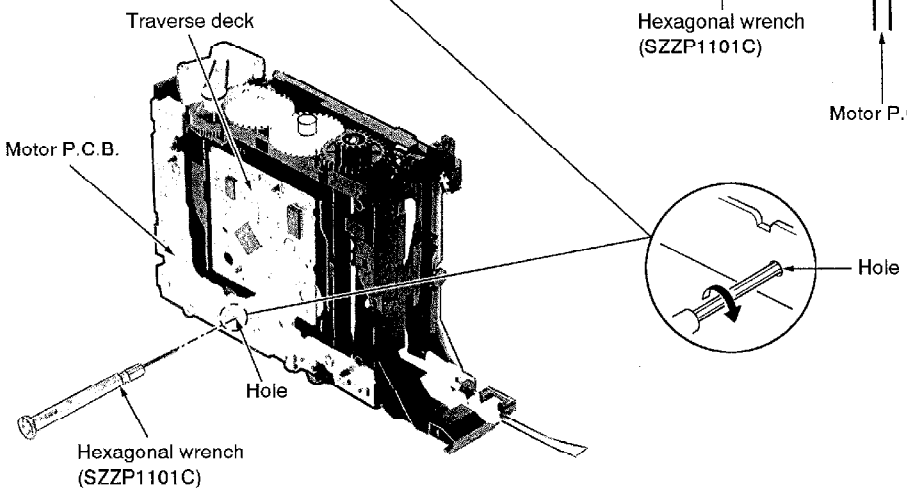
❶ Move the front lock gear manually in the direction of arrow and then, unlock the loading unit.

❷ Move the loading unit to the right end manually.
(Move the unit to the right direction beyond the center of the frame.)

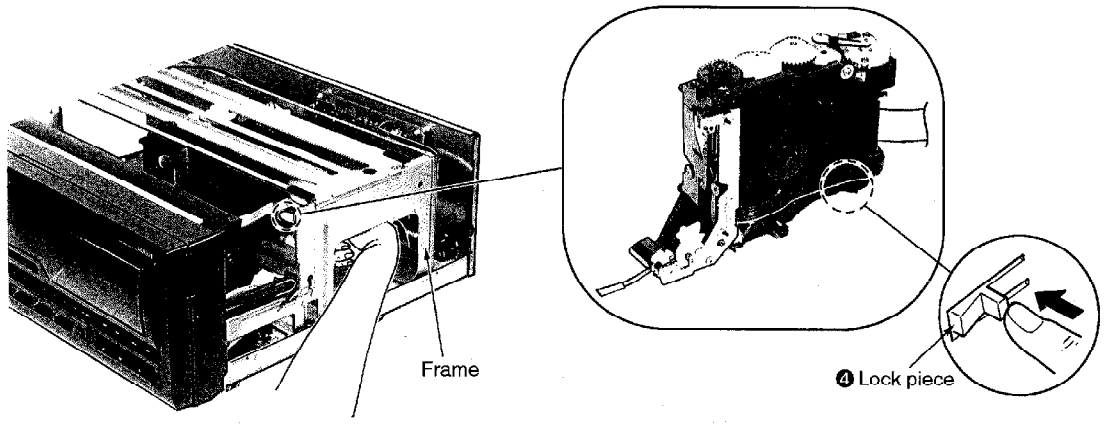


❸ Rotate the reduction gear B clockwise with 2mm type hexagonal wrench (SZZP1101C).



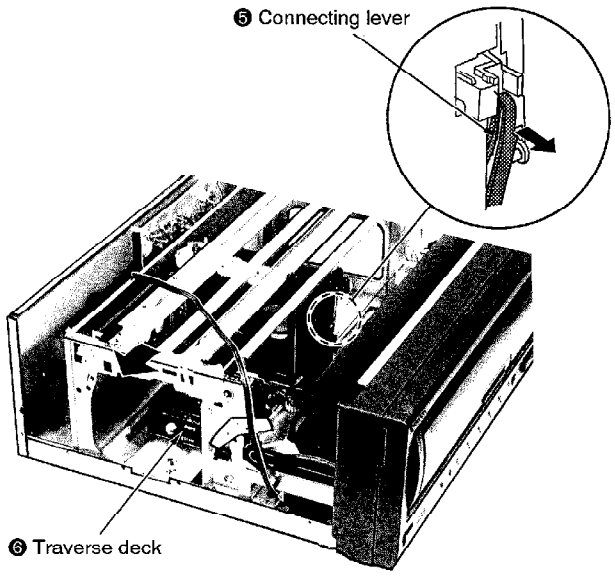


Act.2 | Independent traverse deck | Disassembly



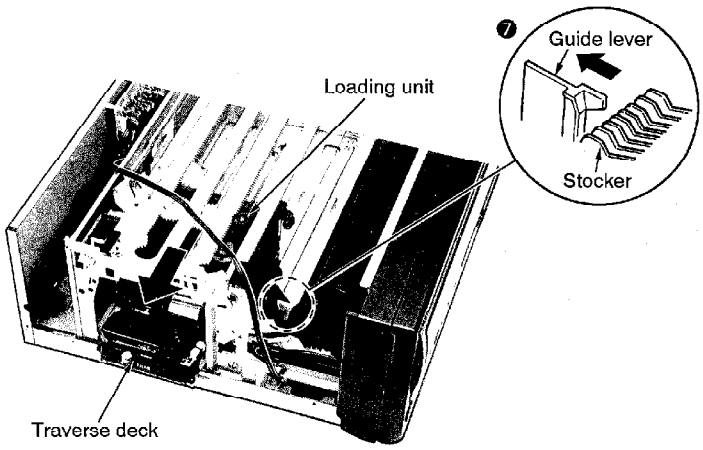
NOTE
Handle the edge of frame with care.

❹ Put the right hand into the right side of frame and then, pressing the lock piece, rotate the hexagonal wrench to clockwise.



❺ Pull the connecting lever in the direction of arrow.

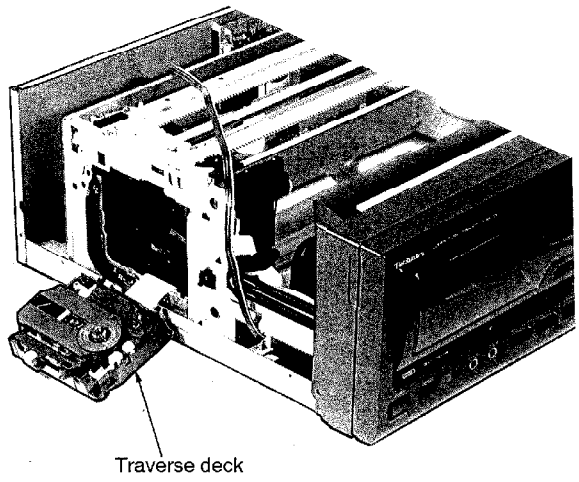
❻ Separate the traverse deck from the loading unit.



❼ Move the guide lever in the direction of arrow and then, move the loading unit to the left end with relieving the engagement to stocker.

Act.2 | Independent traverse deck | Operation checks

■ Focus operation confirmation



❶ Set the switch to TEST MODE.
(☞Refer to page 15)

❷ Press the button A on the operation panel.

⇩

Standby the traverse deck to individual operation.

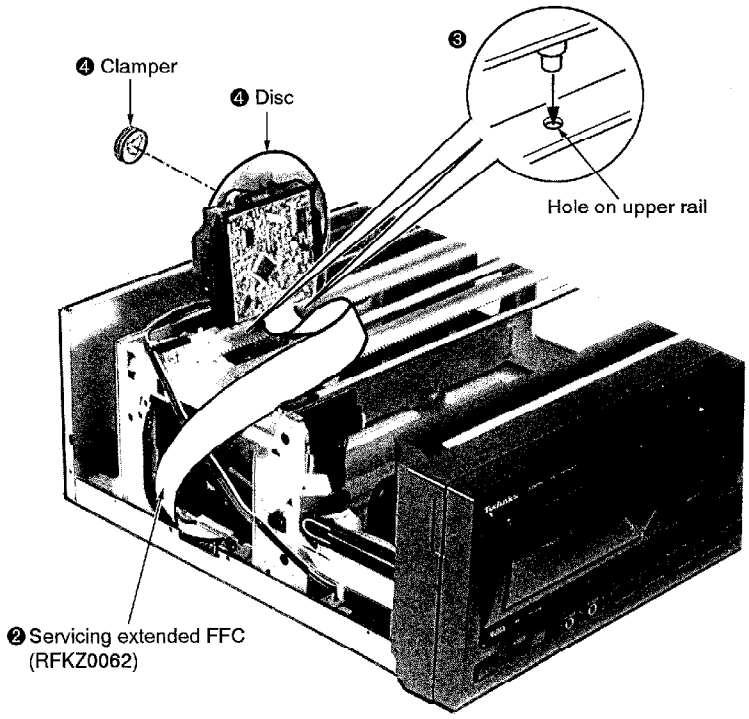
⇩

Press the PLAY(▶)button.

⇩

Confirm the focus operation visually.

■ Servo module confirmation



❶ Remove the FFC between the traverse deck and loading unit.

❷ Connect the servicing extended FFC between the traverse deck and loading unit.

❸ Locate the servo module faced to you and then, align the traverse deck with the hole on upper rail.

❹ Attach the disc to the turn table with clamper (magnet).

⇩

Preparation for operation checks is completed.

❺ Set the switch to TEST MODE.
(☞Refer to page 15)

❻ Press the button A on the operation panel.

⇩

Standby the traverse deck to individual operation.

⇩

Press the PLAY(▶)button.

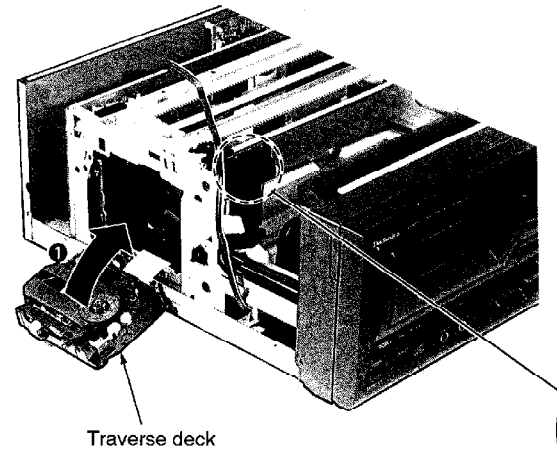
⇩

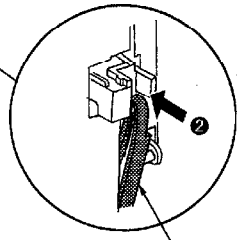
CD play starts.

⇩

Check the servo module.

Act.2 | Independent traverse deck | Reassembly

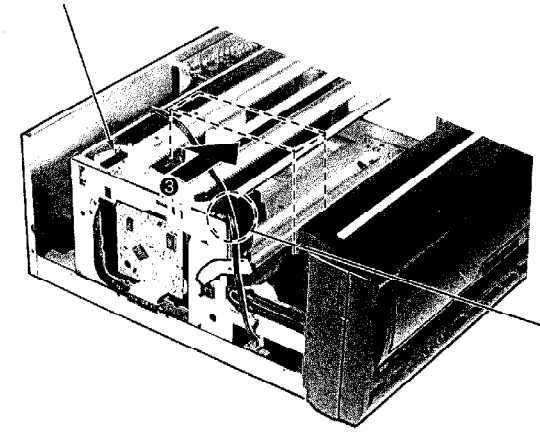


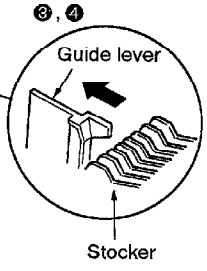


❶ Equip the traverse deck with the loading unit.

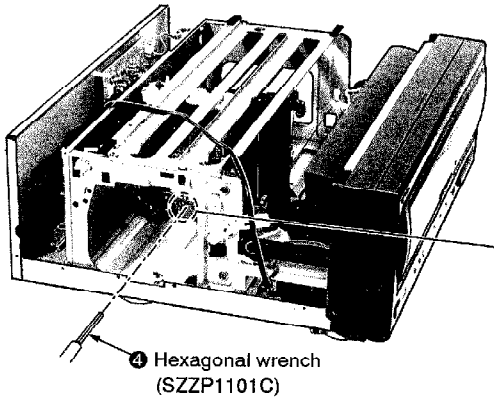
❷ Push the guide lever in the direction of arrow with supporting manually not to be fall free the traverse deck.

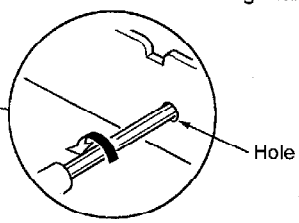
The traverse deck will not fall free as shown above.



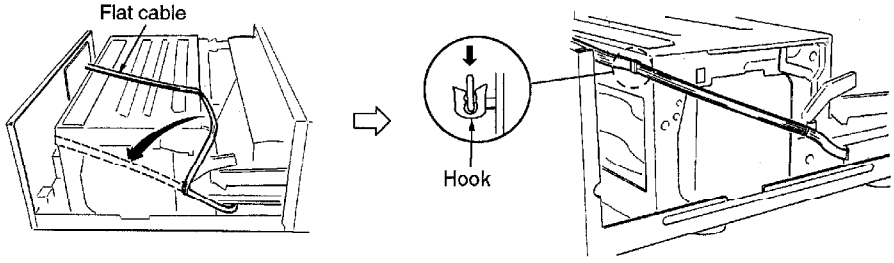


❸ Move the guide lever in the direction of arrow and then, move the loading unit to the center with relieving the engagement to stocker.



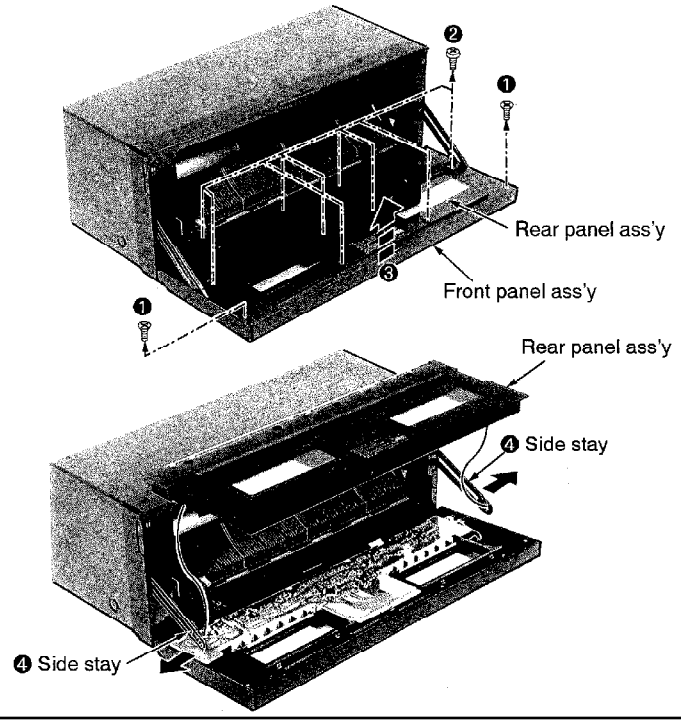


❹ With keeping the guide lever in the direction of arrow, rotate the reduction gear to counterclockwise fulley with 2mm type hexagonal wrench(SZZP1101C)



※ Arrange the flat cable in original form.

Act.3 | Front panel | Disassembly



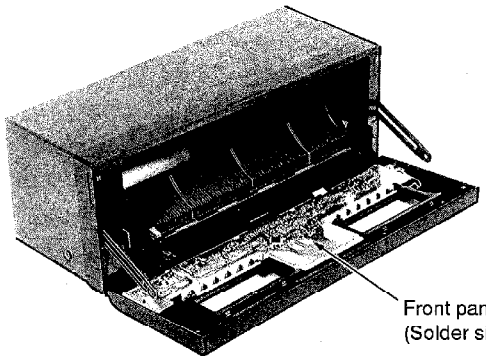
❶ Remove the 2 countersunk screws.

❷ Remove the 10 screws.

❸ Lift up the rear panel ass'y.

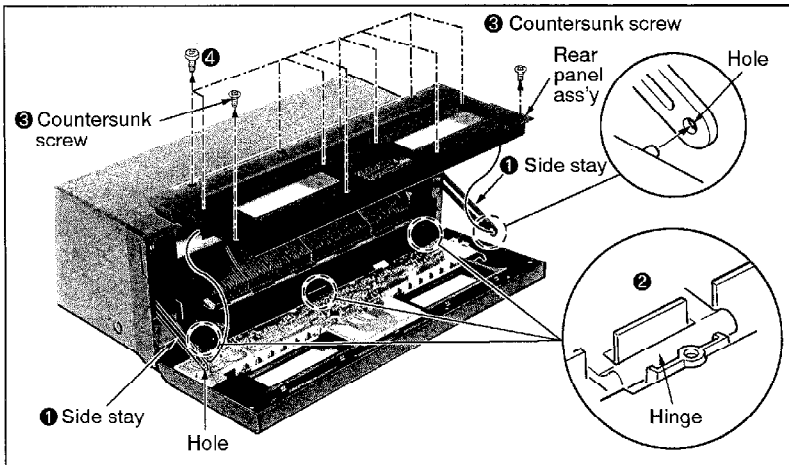
❹ Remove the rear panel ass'y with releasing the both side stays.

Act.3 | Front panel | Operation checks



• Perform the operation checks in the state as shown left.

Act.3 | Front panel | Reassembly



❶ Align the both of back panel with the hole of side stays.

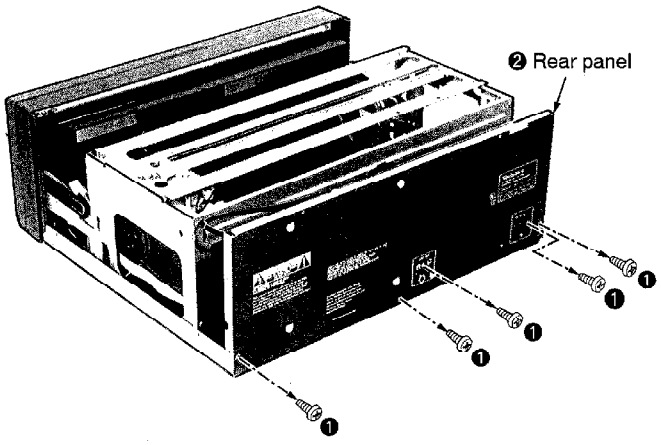
❷ Install the hinges to the rear panel ass'y.

❸ Install the 2 countersunk screws.

Make sure that the countersunk screws are in correct position.

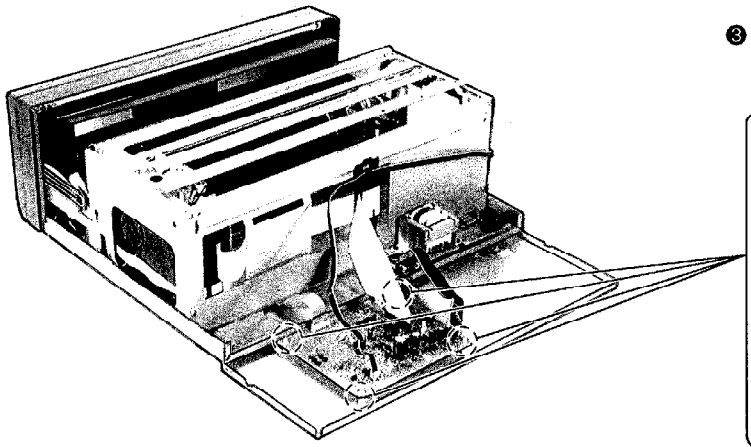
❹ Install the 10 screws.

Act.3 | Main P.C.B. | Disassembly

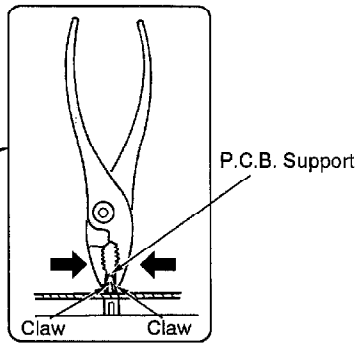


❶ Remove the 5 screws.

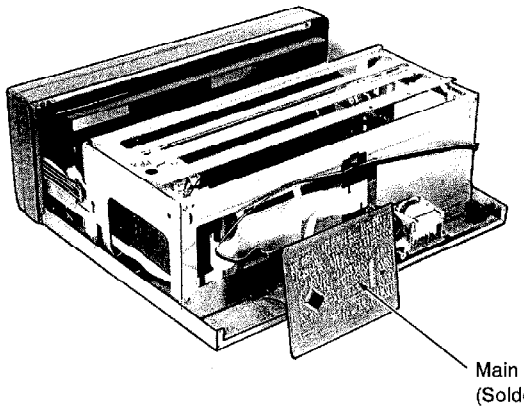
❷ Remove the rear panel.



❸ Release the P.C.B. supports from the main P.C.B..
(Pinch the claws of P.C.B. supports with plier as shown below.)



Act.3 | Main P.C.B. | Operation checks



• Perform the operation checks in the state as shown left.

Act.3 | Main P.C.B. | Reassembly

For reassembly after operation check, perform in reverse order of disassembly (❶–❸).

■ Measurements And Adjustments

Warning: This product uses a laser diode. Refer to caution statements on page 2.

Measuring Instruments and Special Tools

- Test discs
1. Playability test disc (SZZP1054C)
2. Uneven test disc (SZZP1056C)
- Musical program disc (ordinary)
- DC electronic voltmeter (EVM)

PREPARATION

1.Remove the loading unit as shown in Fig. 1.
(Refer to "Handling of the loading unit" on pages 28, 29.)
2.Set the unit in the test mode as follows: hold the STOP and PLAY keys on and set the POWER switch to ON.
(Refer to "Test mode setting" on page 21.)
3.Follow the adjustment procedure.

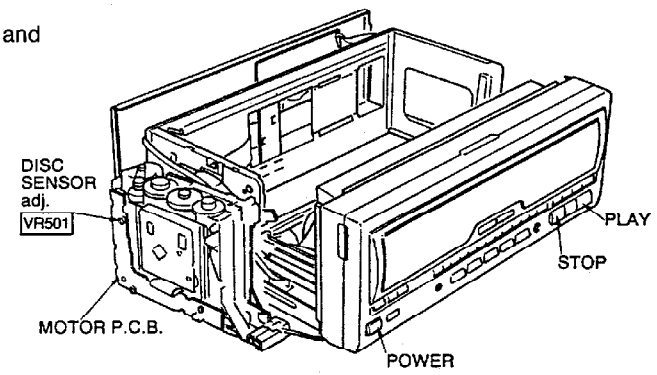


Fig.1

(1)DISC SENSOR ADJUSTMENT

1.Connect the DC electronic voltmeter across **TP501** (+) and **TP502** (−) on the motor P.C.B. as shown in Fig. 2.

2.Adjust **VR501** so that the DC electronic voltmeter read **2.8±0.1V**.

(2)CHECK OF PLAY OPERATION AFTER ADJUSTMENT

*** Checking Skip Search**

1.Play an ordinary musical program disc.
2.Press the skip button to check for normal skip search operation (in both the forward and reverse directions).

*** Checking Manual Search**

1.Play an ordinary musical program disc.
2.Press the manual search button to check for smooth manual search operations at either low or high speed (in both the forward and reverse directions).

*** Checking Playability**

1.Play the 0.7 mm black dot and the 0.7 mm wedge on the playability test disc (SZZP1054C) and verify that no sound skip or noise occurs.
2.Play the middle tracks of the uneven test disc (SZZP1056C) and verify that no sound skip or noise occurs.

■ Adjustment points

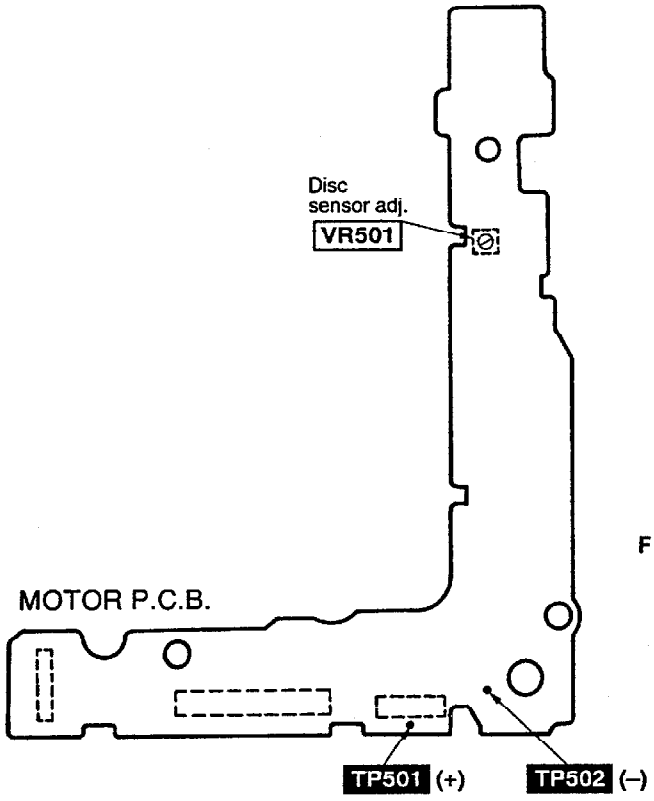
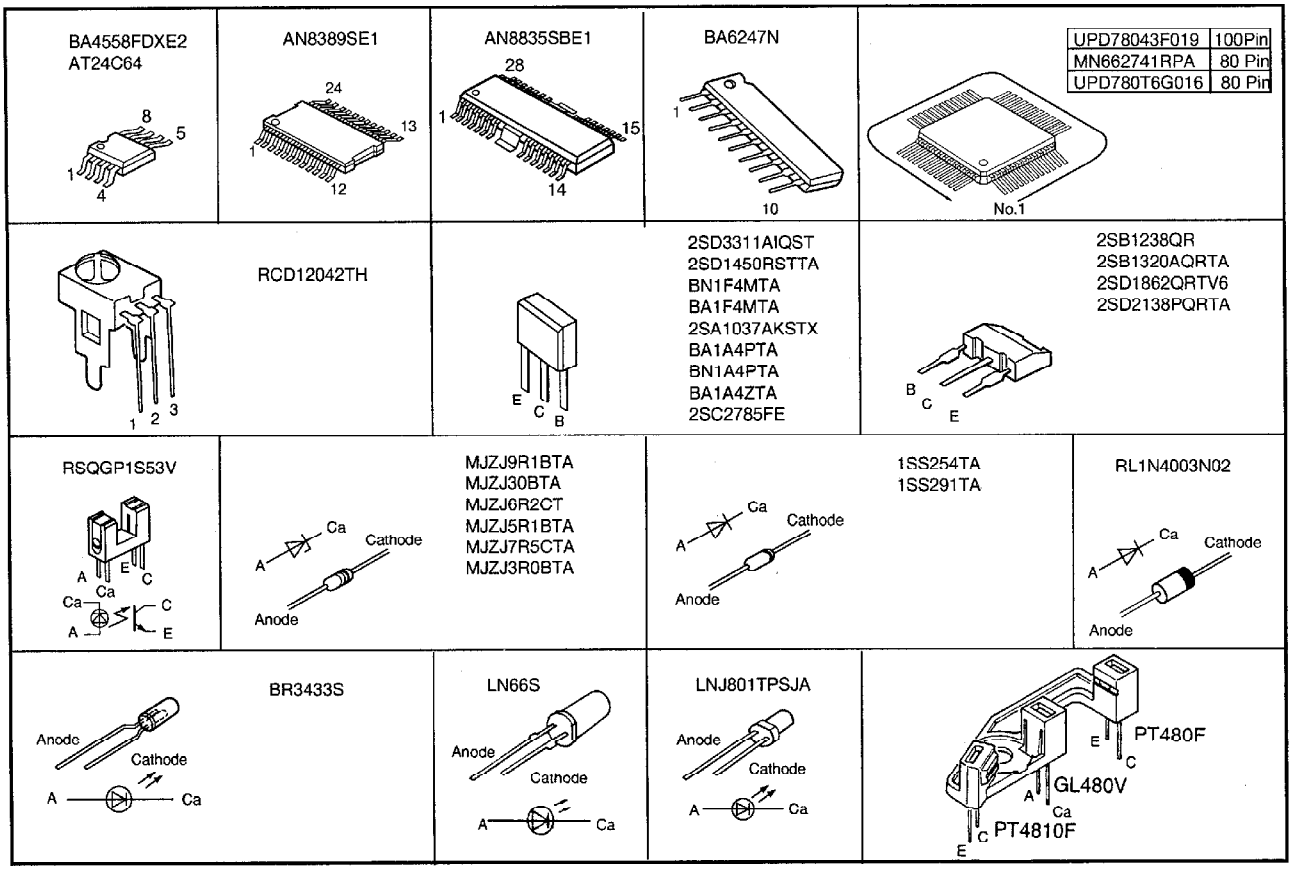
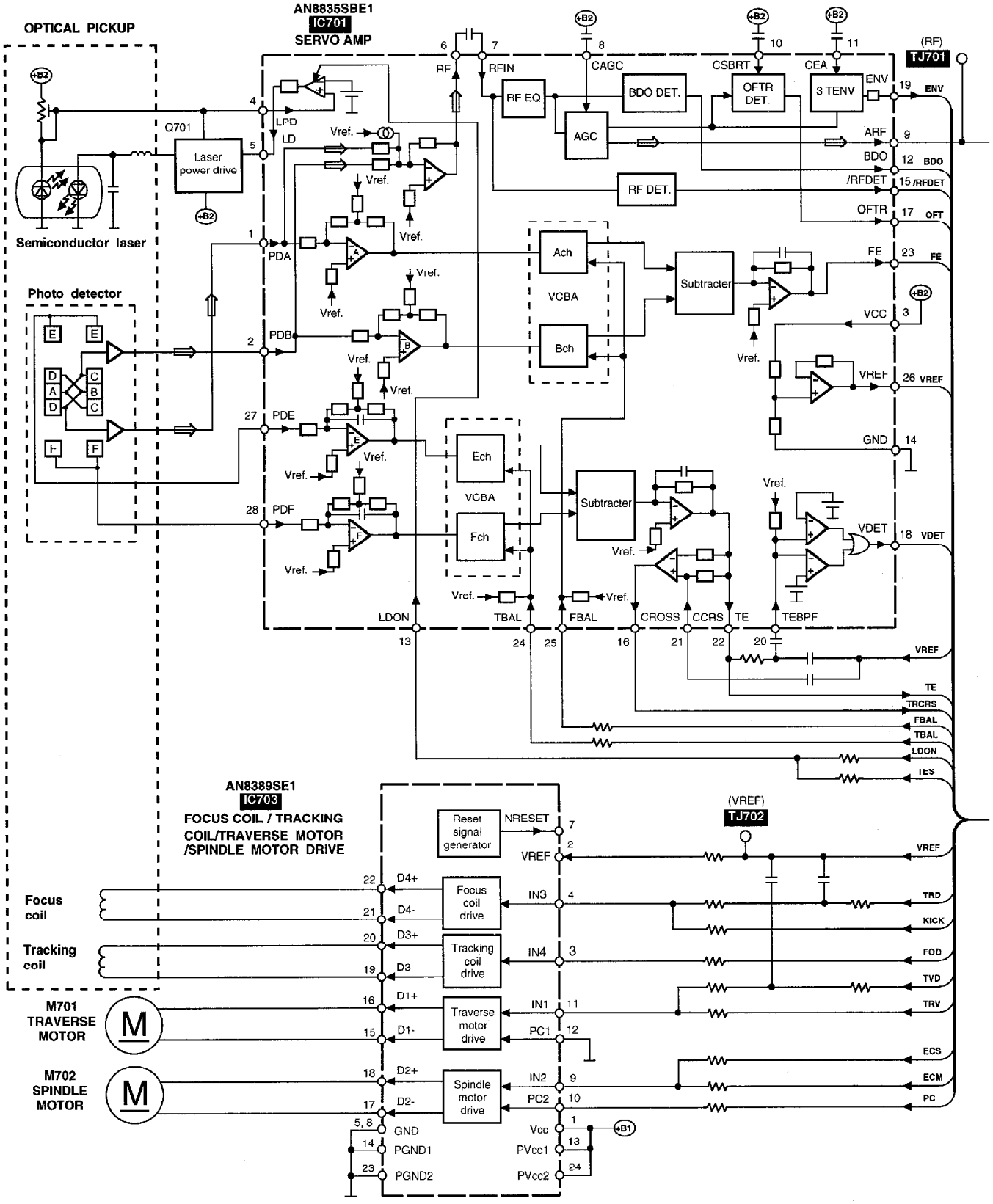


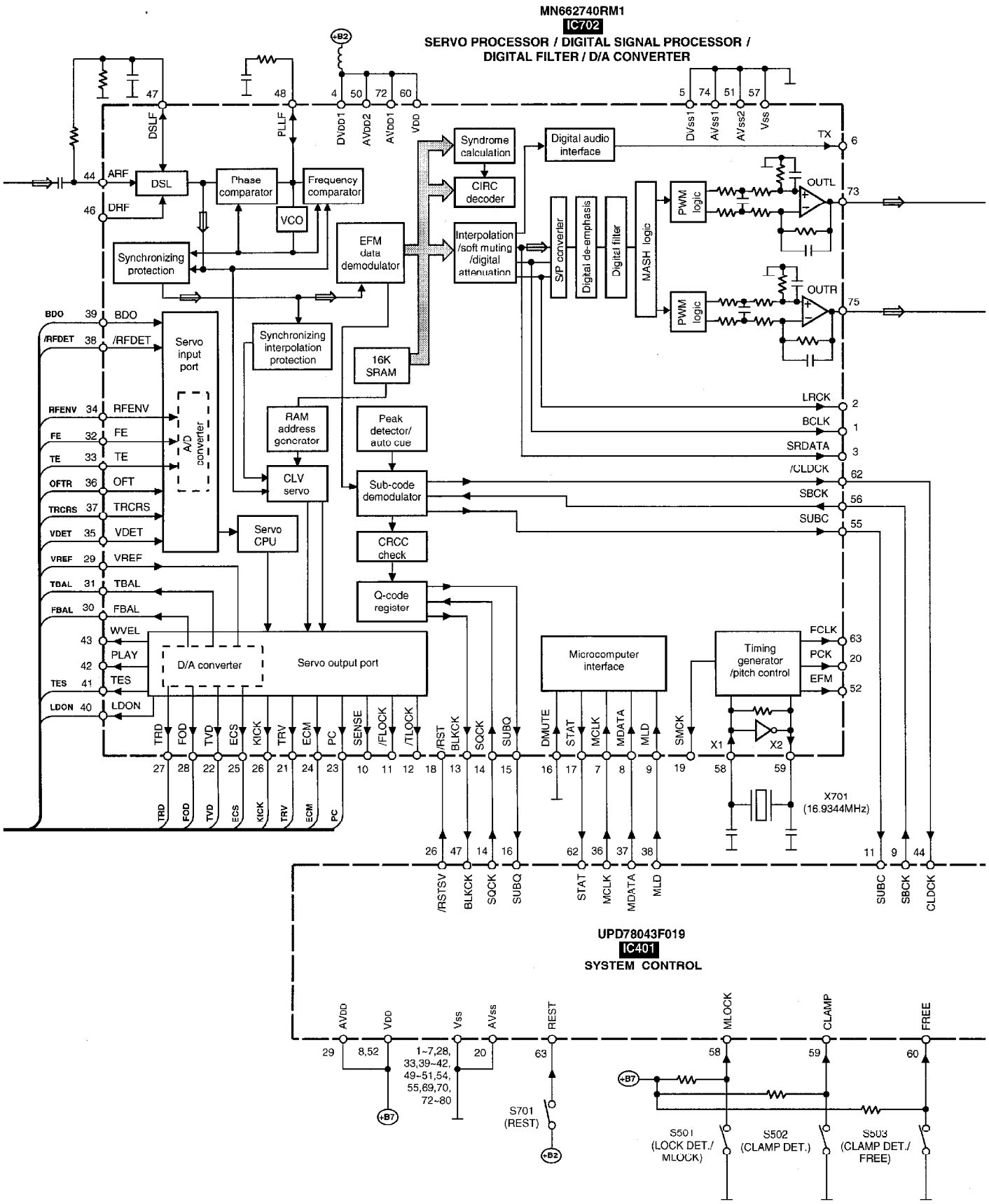
Fig.2

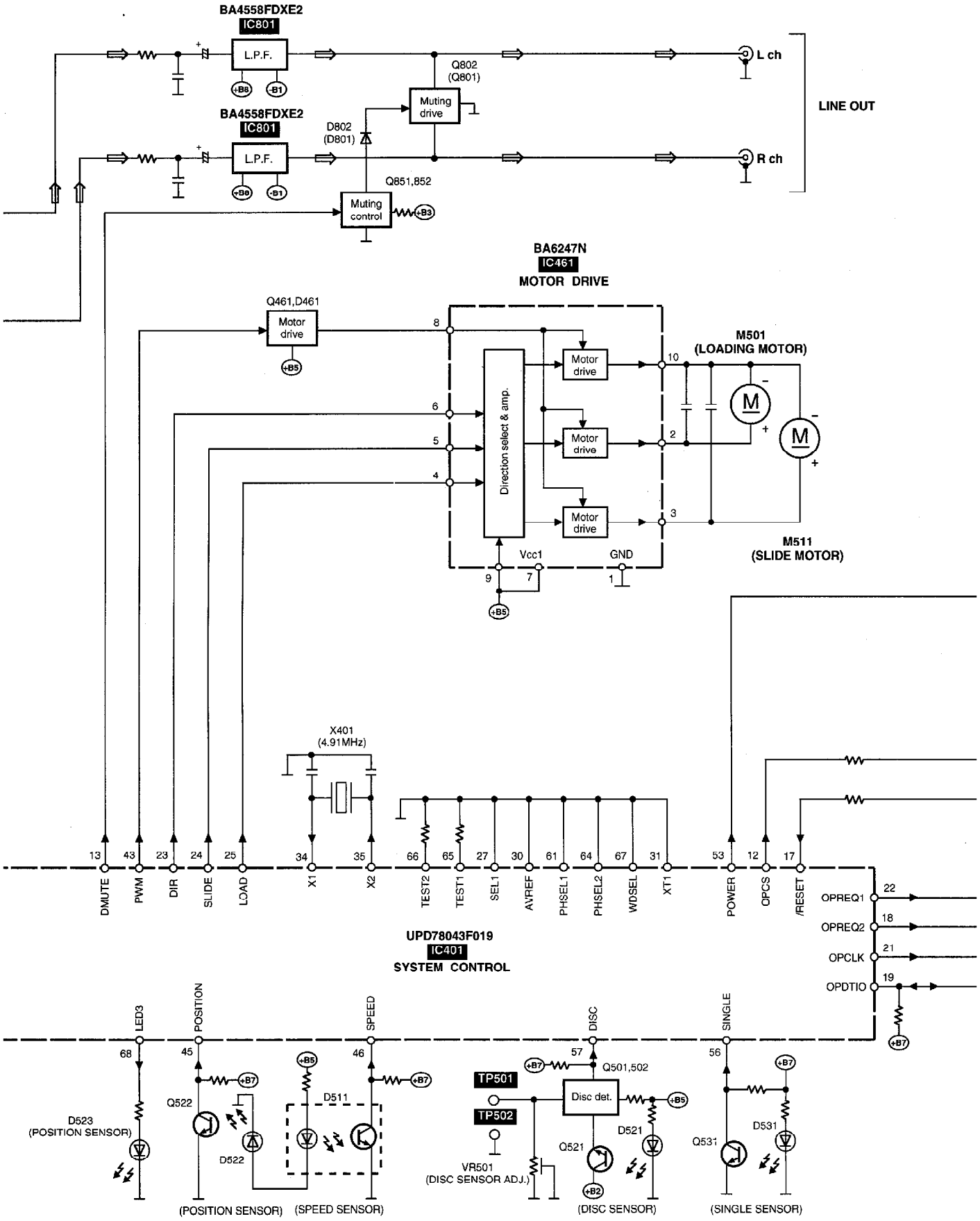
■ Type Illustrations of IC's, transistors and diodes

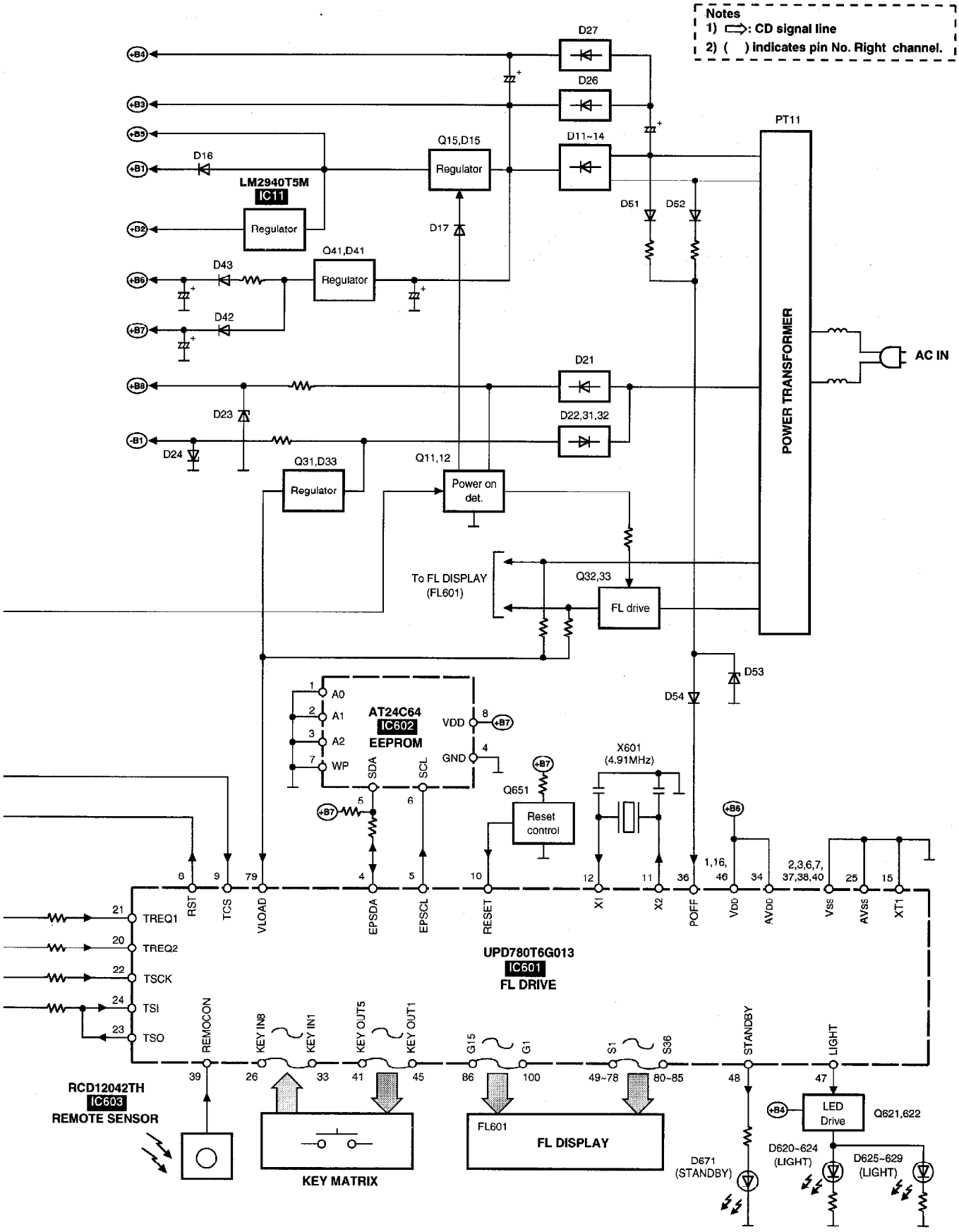


■ Block Diagram




MN662740RM1
IC702
SERVO PROCESSOR / DIGITAL SIGNAL PROCESSOR /
DIGITAL FILTER / D/A CONVERTER
+B2
DSLF
PLLF
DVDD1
AVDD2
AVDD1
VDD
DVss1
AVss1
AVss2
Vss
ARF
DRF
DSL
Phase comparator
Frequency comparator
VCO
Synchronizing protection
EFM data demodulator
Syndrome calculation
CIRC decoder
Interpolation /soft muting /digital attenuation
Digital audio interface
S/P converter
Digital de-emphasis
Digital filter
MASH logic
PWM logic
PWM logic
TX
OUTL
OUTR
BDO
/RFDET
Servo input port
A/D converter
RFENV
FE
TE
OFTR
TRCRS
VDET
VREF
TBAL
FBAL
WVEL
PLAY
TES
LDON
Synchronizing interpolation protection
16K SRAM
RAM address generator
CLV servo
Servo CPU
Peak detector/ auto cue
Sub-code demodulator
CRCC check
Q-code register
D/A converter
Servo output port
Microcomputer interface
Timing generator /pitch control
LRCK
BCLK
SRDATA
/CLDCK
SBCK
SUBC
FCLK
PCK
EFM
X1
X2
X701
(16.9344MHz)
TRD
FOD
TVD
ECS
KICK
TRV
ECM
PC
SENSE
/FLOCK
/TLOCK
/RST
BLKCK
SQCK
SUBQ
DMUTE
STAT
MCLK
MDATA
MLD
SMCK
/RSTSV
UPD78043F019
IC401
SYSTEM CONTROL
AVDD
VDD
Vss
AVss
REST
MLOCK
CLAMP
FREE
1~7,28, 33,39~42, 49~51,54, 55,69,70, 72~80
S701 (REST)
S501 (LOCK DET./ MLOCK)
S502 (CLAMP DET.)
S503 (CLAMP DET./ FREE)


BA4558FDXE2
IC801
L.P.F.
+B6
-B1
Q802
(Q801)
Muting drive
L ch
LINE OUT
BA4558FDXE2
IC801
D802
(D801)
L.P.F.
R ch
Q851,852
Muting control
+B3
BA6247N
IC461
MOTOR DRIVE
Q461,D461
Motor drive
+B5
8
6
5
4
Direction select & amp.
Motor drive
Motor drive
Motor drive
10
2
3
M501
(LOADING MOTOR)
M511
(SLIDE MOTOR)
Vcc1
GND
9
7
1
X401
(4.91MHz)
13
43
23
24
25
34
35
66
65
27
30
61
64
67
31
53
12
17
DMUTE
PWM
DIR
SLIDE
LOAD
X1
X2
TEST2
TEST1
SEL1
AVREF
PHSEL1
PHSEL2
WDSEL
XT1
POWER
OPCS
/RESET
OPREQ1
OPREQ2
OPCLK
OPDTIO
22
18
21
19
UPD78043F019
IC401
SYSTEM CONTROL
LED3
POSITION
SPEED
DISC
SINGLE
68
45
46
57
56
D523
(POSITION SENSOR)
Q522
D522
D511
TP501
TP502
Q501,502
Disc det.
VR501
(DISC SENSOR ADJ.)
Q521
D521
Q531
D531
(POSITION SENSOR)
(SPEED SENSOR)
(DISC SENSOR)
(SINGLE SENSOR)


Notes
1) ⇨: CD signal line
2) ( ) indicates pin No. Right channel.
D27
D26
D11~14
PT11
Q15,D15
Regulator
D16
LM2940T5M
IC11
Regulator
D17
D51
D52
Q41,D41
Regulator
D43
D42
D21
D22,31,32
D23
D24
Q31,D33
Regulator
Q11,12
Power on det.
POWER TRANSFORMER
AC IN
To FL DISPLAY (FL601)
Q32,33
FL drive
D53
D54
AT24C64
IC602
EEPROM
A0
A1
A2
WP
SDA
SCL
VDD
GND
Q651
Reset control
X601 (4.91MHz)
UPD780T6G013
IC601
FL DRIVE
TREQ1
TREQ2
TSCK
TSI
TSO
RST
TCS
VLOAD
EPSDA
EPSCL
RESET
X1
X2
POFF
VDD
AVDD
VSS
AVSS
XT1
REMOCON
KEY IN8
KEY IN1
KEY OUT5
KEY OUT1
G15
G1
S1
S36
STANDBY
LIGHT
RCD12042TH
IC603
REMOTE SENSOR
KEY MATRIX
FL601
FL DISPLAY
LED Drive
Q621,622
D620~624 (LIGHT)
D625~629 (LIGHT)
D671 (STANDBY)

■ Terminal Function of IC's

● IC702 (MN662740RM2): Servo processor/ digital signal processor/ digital filter/ D/A converter

No.	Mark	I/O Division	Function
1	BCLK	O	Serial bit clock output (Not used, open)
2	LRCK	O	L/R discriminating signal output (Not used, open)
3	SRDATA	O	Serial data (Not used, open)
4	DVDD1	I	Power supply (digital circuit) terminal
5	DVSS1	—	GND (digital circuit) terminal
6	TX	O	Digital audio interface signal
7	MCLK	I	Command clock signal
8	MDATA	I	Command data signal
9	MLD	I	Command load signal ("L" : LOAD)
10	SENSE	O	Sense signal (OFT, FESL, NACEND, NAJEND, POSAD, SFG)
11	/FLOCK	O	Optical servo condition (focus) ("L" : lead-in)
12	/TLOCK	O	Optical servo condition (tracking) ("L" : lead-in)
13	BLKCK	O	Sub-code block clock (f=75 Hz)
14	SQCK	I	Sub-code Q register clock
15	SUBQ	O	Sub-code Q data
16	DMUTE	—	Muting input ("H" : MUTE) (Not used, connected to GND)
17	STAT	O	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQCK)
18	/RST	I	Reset signal ("L" : reset)
19	SMCK	—	System clock (f=4.2336 MHz) (Not used, open)
20	PMCK	—	Frequency division clock signal ($f=\frac{1}{192}\times$Crystal OSC(16.9344MHz) = 88.2 kHz) (Not used, open)
21	TRV	O	Traverse servo control
22	TVD	O	Traverse drive signal

No.	Mark	I/O Division	Function
23	PC	O	Turntable motor drive signal ("L" : ON)
24	ECM	O	Turntable motor drive signal (Forced mode)
25	ECS	O	Turntable motor drive signal (Servo error signal)
26	KICK	O	Kick pulse output
27	TRD	O	Tracking drive signal output
28	FOD	O	Focus drive signal output
29	VREF	I	D/A drive output (TVD, ECS, TRD, FOD, FBAL, TBAL) normal voltage input terminal
30	FBAL	O	Focus balance adj. output
31	TBAL	O	Tracking balance adj. output
32	FE	I	Focus error signal (analog input)
33	TE	I	Tracking error signal (analog input)
34	RFENV	I	RF envelope signal
35	VDET	I	Oscillation det. signal ("H" : det.)
36	OFTR	I	Off track signal ("H" : Off track)
37	TRCRS	I	Track cross signal input
38	/RFDET	I	RF detection signal ("L" : detection)
39	BDO	I	Dropout detection signal ("H" : dropout)
40	LDON	O	Laser power control ("H" : ON)
41	TES	O	Tracking error shunt output ("H" : dropout)
42	PLAY	O	Play signal ("H" : play) (Not used, open)
43	WVEL	O	Double velocity status signal ("H": double) (Not used, open)
44	ARF	I	RF signal input

No.	Mark	I/O Division	Function
45	IREF	I	Reference current input
46	DRF	I	DSL bias terminal (Not used, open)
47	DSLF	I/O	DSL loop filter terminal
48	PLLF	I/O	PLL loop filter terminal
49	VCOF	I/O	VCO loop filter terminal (Not used, connected to GND)
50	AVDD2	I	Power supply (analog circuit) terminal 2
51	AVSS2	—	GND (analog circuit) terminal
52	EFM	O	EFM signal (Not used, open)
53	PCK	O	PLL extract clock (f=4.3218MHz) (Not used, open)
54	PDO	O	Phase comparated signal of EFM and PCK (Not used, open)
55	SUBC	O	Sub-code serial output clock
56	SBCK	I	Sub-code serial input data
57	VSS	—	GND terminal
58	X1	I	Crystal oscillator terminal (f=16.9344MHz)
59	X2	O	
60	VDD	I	Reset signal ("L": reset)
61	BYTCK	O	Byte clock signal (Not used, open)
62	/CLDCK	O	Sub-code frame clock signal (f CLDCK=7.35KHz: Normal)
63	FCLK	O	Crystal frame clock (Not used, open)
64	IPFLAG	O	Interpolation flag terminal (Not used, open)

No.	Mark	I/O Division	Function
65	FLAG	O	Flag terminal (Not used, open)
66	CLVS	O	Turntable servo phase synchro signal ("H": CLV, "L": Rough servo) (Not used, open)
67	CRC	O	Sub-code CRC check terminal ("H": ON, "L": NG) (Not used, open)
68	DEMPH	O	De-emphasis ON signal ("H": ON) (Not used, open)
69	RESY	O	Re-synchronizing signal of frame sync. (Not used, open)
70	/RST2	I	Reset terminal after "MASH" circuit (Not used, connected to power supply)
71	/TEST	I	Test terminal (Normal: "H") (Not used, connected to power supply.)
72	AVDD1	I	Power supply (analog circuit) terminal (1)
73	OUTL	O	Lch audio signal
74	AVSS1	—	GND (analog circuit) terminal (1)
75	OUTR	O	Rch audio signal
76	RSEL	I	Polarity direction control terminal of RF signal (Not used, connected to power supply)
77	CSEL	I	Frequency control terminal of crystal oscillator (Not used, connected to GND)
78	PSEL	I	Test terminal (Normal: "L") (Not used, connected to GND)
79	MSEL	I	"SMCK" terminal frequency select ("L": SMCK=4.2336MHz) (Not used, connected to GND)
80	SSEL	O	"SUBQ" terminal mode select ("H": Q code buffer) (Not used, connected to power supply)

● IC401 (UPD78043F019): System control

No.	Mark	I/O Division	Function
1 ~ 7	NONE	—	Connected to GND
8	VDD	I	Power supply terminal
9	SBCK	I	Sub-code serial input data
10	NC	—	Not connected
11	SUBC	I	Sub-code serial input clock
12	OPCS	O	Chip select terminal
13	DMUTE	O	Muting control signal
14	SQCK	O	Sub-code Q register clock
15	NC	—	Not connected
16	SUBQ	I	Sub-code Q data
17	/RESET	O	Reset signal output
18	OPREQ2	O	Request signal 2 output
19	OPDTIO	I/O	Data signal input / output
20	AVSS	—	GND terminal
21	OPCLK	O	Clock signal output
22	OPREQ1	O	Request signal 1 output
23	DIR	O	Motor control signal
24	SLIDE	O	Motor control signal
25	LOAD	O	Motor control signal
26	RSTSV	O	Reset signal output
27	SEL1	I	Connected to GND
28	VSS	—	Connected to GND

No.	Mark	I/O Division	Function
29	AVDD	I	Power supply terminal
30	AVREF	I	Power supply terminal (Not used, connected to GND)
31	XT1	—	Not used, connected to GND
32	XT2	—	Not used, open
33	VSS	—	GND terminal
34	X1	I	Crystal Osc terminal (f=4.2336MHz)
35	X2	O	
36	MCLK	O	Command clock signal
37	MDATA	O	Command data signal
38	MLD	O	Command load signal ("L" LOAD)
39 ~ 42	VSS	—	Connected to GND
43	PWM	O	Motor control signal
44	POFF	I	Power det. terminal
45	POSITION	I	Rotary tray position det. terminal
46	SPEED	I	Loading motor speed sensor signal
47	BLKCK	I	Sub-code block clock
48	IC	—	Not used, connected to GND
49 ~ 51	VSS	—	Connected to GND
52	VDD	I	Power supply terminal
53	POWER	O	Power ON/OFF output terminal

No.	Mark	I/O Division	Function
54	VSS	—	Connected to GND
55	VSS	—	Connected to GND
56	SINGLE	I	Disc slot det. terminal for single play
57	DISC	I	Disc control signal
58	MLOCK	I	Mechanism det. terminal (S501)
59	CLAMP	I	Mechanism det. terminal(S502)
60	FREE	I	Mechanism det. terminal (S503)
61	PHSEL1	—	Connected to GND
62	STAT	I	Status signal (CRC,CUE, CLVS, TTSTOP,FCLV, QCK)
63	REST	I	Rest position det.

No.	Mark	I/O Division	Function
64	PHSEL2	—	Connected to GND
65	STP1	—	Not used, connected to GND
66	STP2	—	Not used, connected to GND
67 ∫ 70	NONE	—	Not connected
71	VPP	I	Power supply terminal (Not used, connected to GND)
72 ∫ 80	NONE	—	Not connected

• IC703 (AN8389SE1): Focus coil/ tracking coil/ traverse motor/ spindle motor drive

No.	Mark	I/O Division	Function
1	Vcc	I	Power supply terminal
2	VREF	I	Reference voltage input terminal
3	IN4	I	Motor driver (4) input
4	IN3	I	Motor driver (3) input
5	GND	—	GND terminal
6	NC	—	Not used, connected to GND
7	NRESET	O	Reset terminal (Not used, open)
8	GND	—	GND terminal
9	IN2	O	Motor driver (2) input
10	PC2	I	Turntable motor drive signal (" L " : ON)
11	IN1	I	Motor driver (1) input
12	PC1	O	Not used, connected to GND

No.	Mark	I/O Division	Function
13	PVcc1	O	Driver power supply terminal (1)
14	PGND1	—	Driver GND terminal (1)
15	D1-	O	Motor driver (1) output terminal (-)
16	D1+	O	Motor driver (1) output terminal (+)
17	D2-	O	Motor driver (2) output terminal (-)
18	D2+	I	Motor driver (2) output terminal (+)
19	D3-	I	Motor driver (3) output terminal (-)
20	D3+	I	Motor driver (3) output terminal (+)
21	D4-	O	Motor driver (4) output terminal (-)
22	D4+	O	Motor driver (4) output terminal (+)
23	PGND2	—	Driver GND terminal (2)
24	PVCC2	I	Driver power supply (2)

● IC701 (AN8835SBE1): Servo amp

No.	Mark	I/O Division	Function
1	PDA	I	Focus signal input terminal 1 (Ach)
2	PDB	I	Focus signal input terminal 2 (Bch)
3	VCC	I	Power supply terminal
4	LPD	I	Laser PD signal
5	LD	O	Laser power auto control output
6	RF	O	RF amp terminal
7	RF IN	I	AGC input terminal
8	CAGC	I	AGC detection capacitor input
9	ARF	O	RF signal
10	CSBRT	I	OFTR capacitor connection terminal
11	CEA	I	HPF-AMP capacitor connection terminal
12	BDO	O	Dropout detection control
13	LDON	I	LD APC ON/OFF ("H": ON, "L": OFF)
14	GND	—	GND terminal

No.	Mark	I/O Division	Function
15	/RFDET	O	RF det. signal output terminal ("L" : det.)
16	CROSS	O	Tracking error zero cross output
17	OFTR	O	Off track detection ("H" : det.)
18	VDET	O	Oscillation det. signal ("H" : det.)
19	ENV	O	Envelope signal output terminal
20	TEBPF	I	Oscillation detect input terminal
21	CCRS	I	CROSS capacitor connection terminal
22	TE	O	Tracking error signal
23	FE	O	Focusing error signal
24	TBAL	I	Tracking balance adj. input
25	FBAL	I	Focus balance adj. input
26	VREF	O	Reference voltage output terminal
27	PDE	I	Tracking signal input terminal 1 (E ch)
28	PDF	I	Tracking signal input terminal 2 (F ch)

■ Schematic Diagram(Parts list on pages 63~66,70,71)

CD SERVO CIRCUIT 52,53
FRONT PANEL CIRCUIT 54
SLIDE MOTOR CIRCUIT 55
PHOTO TR (1) CIRCUIT 55
SWITCH CIRCUIT 55
SENSOR CIRCUIT 55
LED (R) CIRCUIT 55
LED (L) CIRCUIT 55
MOTOR CIRCUIT 55
MAIN CIRCUIT ..... 55~57
PHOTO TR. (2) CIRCUIT 55
POWER SUPPLY CIRCUIT 57

Notes:

- **S501:** Lock det. switch (MLOCK) .
- **S502:** Clamp det. switch (CLAMP) .
- **S503:** Clamp det. switch (FREE).
- **S601:** Stop (■) switch. ⏻ /ON"(POWER, STANDBY ⏻ /ON)
- **S602,603:** Disc skip switches.(S602:+,S603:-)
- **S604:** Programing (PROGRAM) switch.
- **S605:** Single play (SINGLE ▶) switch.
- **S606:** Pause (❚❚) switch.
- **S607,608:** Track skip switches.
- **S609:** Direct programming (DIRECT) switch.
- **S610:** Power /timer set (CLOCK/TIMER) switch.
- **S611:** Record timer/play timer (◴ REC/◴ PLAY) switch.
- **S612,613:** Deck1 open (DECK1/⏏ OPEN) switch.
- **S614:** Deck2 open (DECK2/⏏ OPEN) switch.
- **S615:** Super woofer ON/OFF (SUPER WOOFER) switch.
- **S616~620:** Level (LEVEL) switch.
- **S621~631:** Memory set (MEMORY SET ▶▶/▶▶❙) switch.
- **S632:** Text search (TEST SEARCH) switch.
- **S633:** Disc selector (DISC) switch.
- **S634:** Disc enter (DISC ENTER) switch.
- **S635:** Test mode (TEST MODE) switch.
- **S636:** Test edit (TEST EDIT) switch.
- **S637:** Test search (TEST SEARCH) switch.
- **S701:** Rest detector.

- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis.
  Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.
  * The parenthesized are the values of voltage generated during playing (Test disc 1 kHz, L+R, 0 dB) ,others are voltage values in stop mode.
  * AC adaptor is used for power supply.
- : Signal lines.
  ▬▬ : Positive voltage lines and negative voltage lines.
  ⇨ : Audio signal lines.
- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.

Caution!
IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

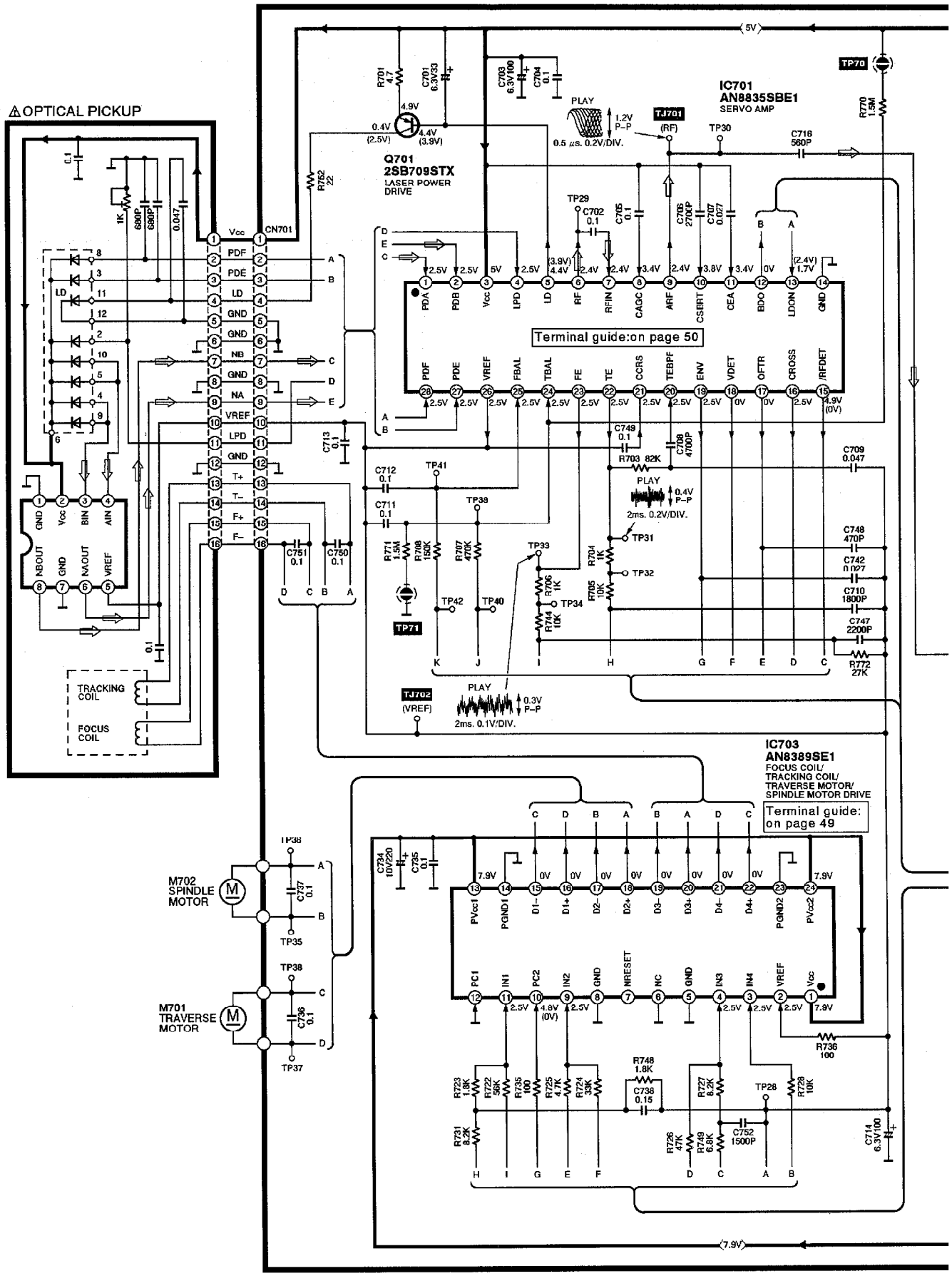
- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the pins of IC or LSI with fingers directly.

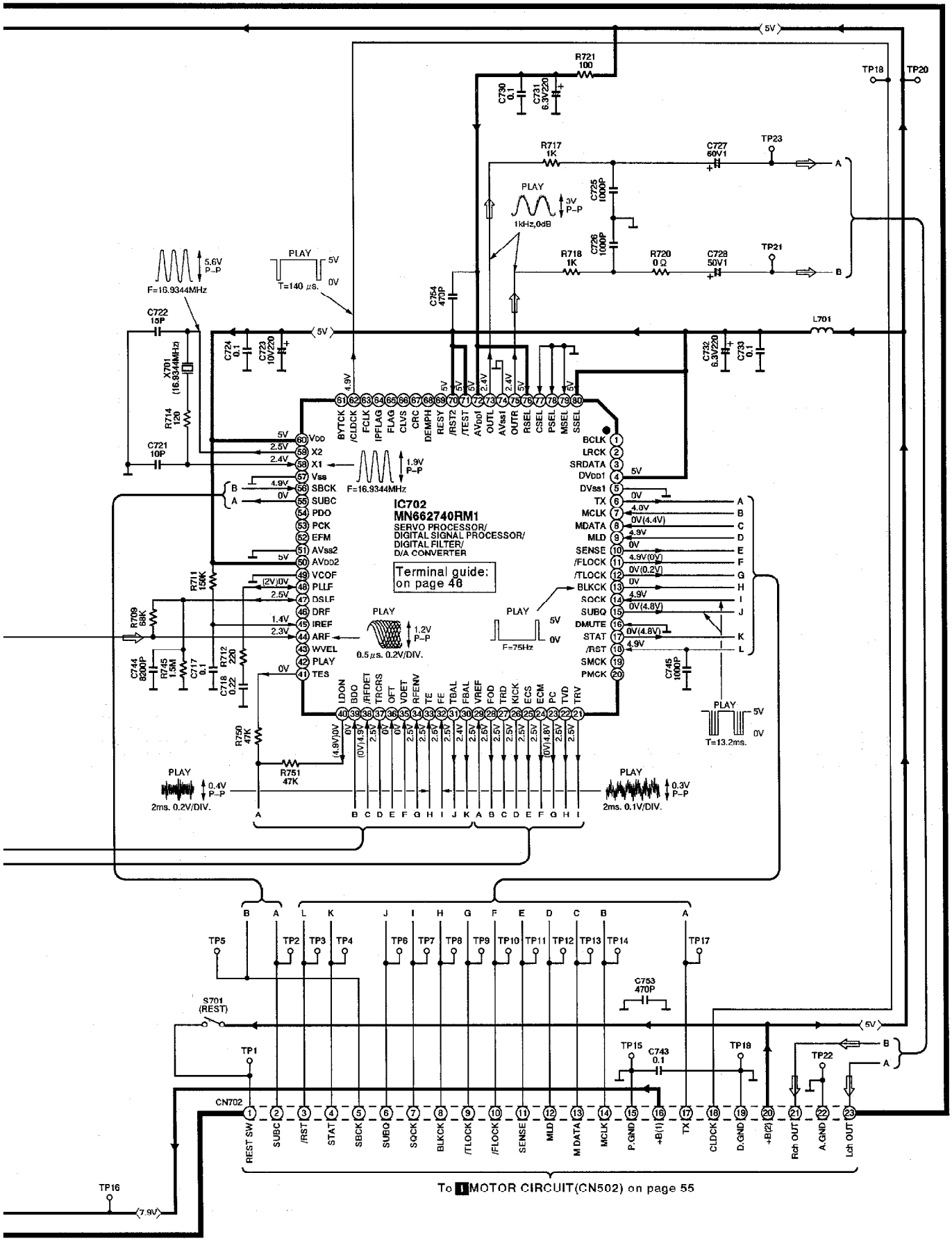
FUSE CAUTION

⊟⊠ This symbol located near the fuse indicates that the fuse used Is slow operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating, refer to the marking adjacent to the symbol.

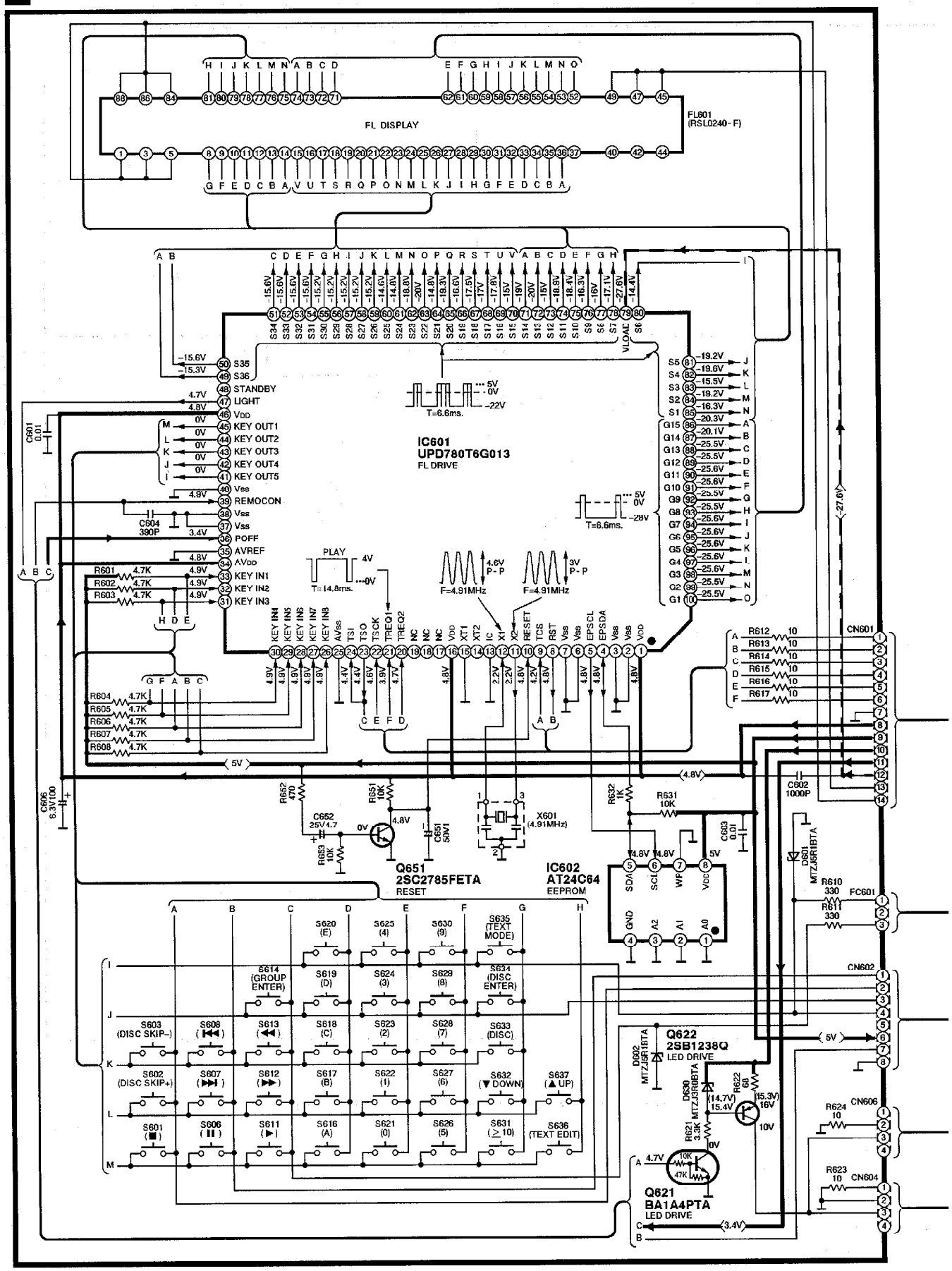
⊟⊠ Ce symbole indique que le fusible utilisé est à trot. Pour une protection permanente, n' utiliser que des fusibles de mêne type. Ce dernier est indiqué là qù le présent symbole est apposé.

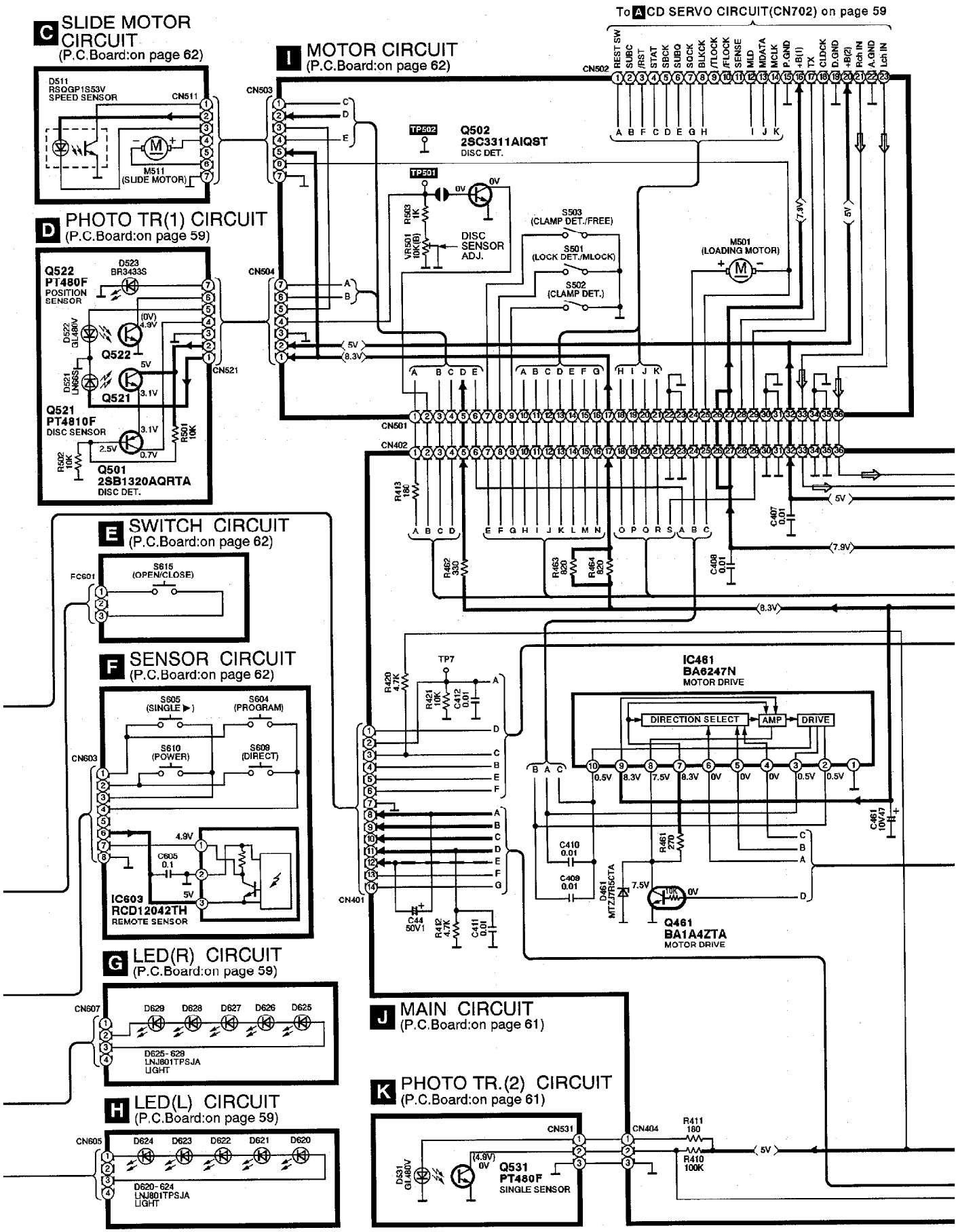
A CD SERVO CIRCUIT (P.C.Board:on page 59)

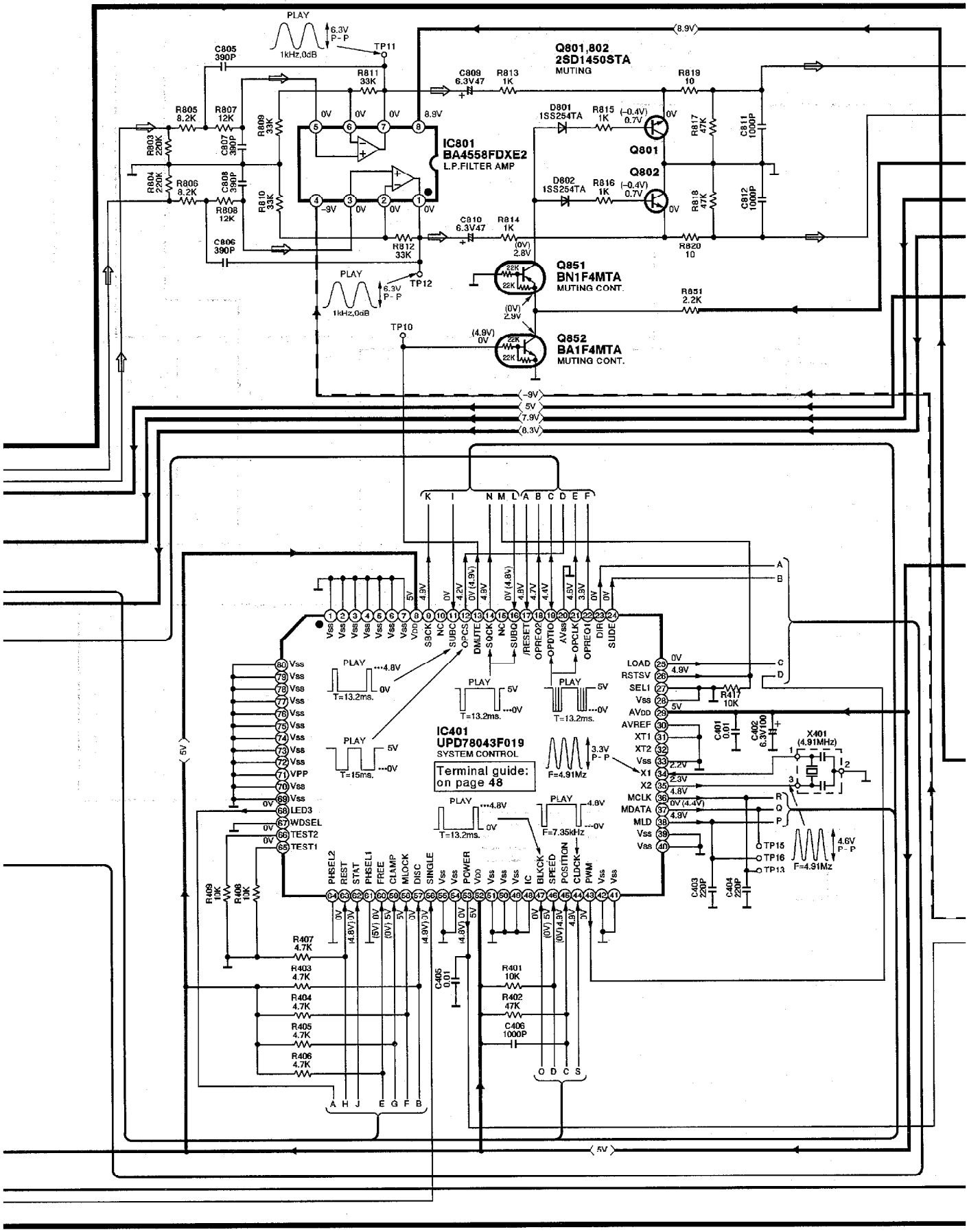


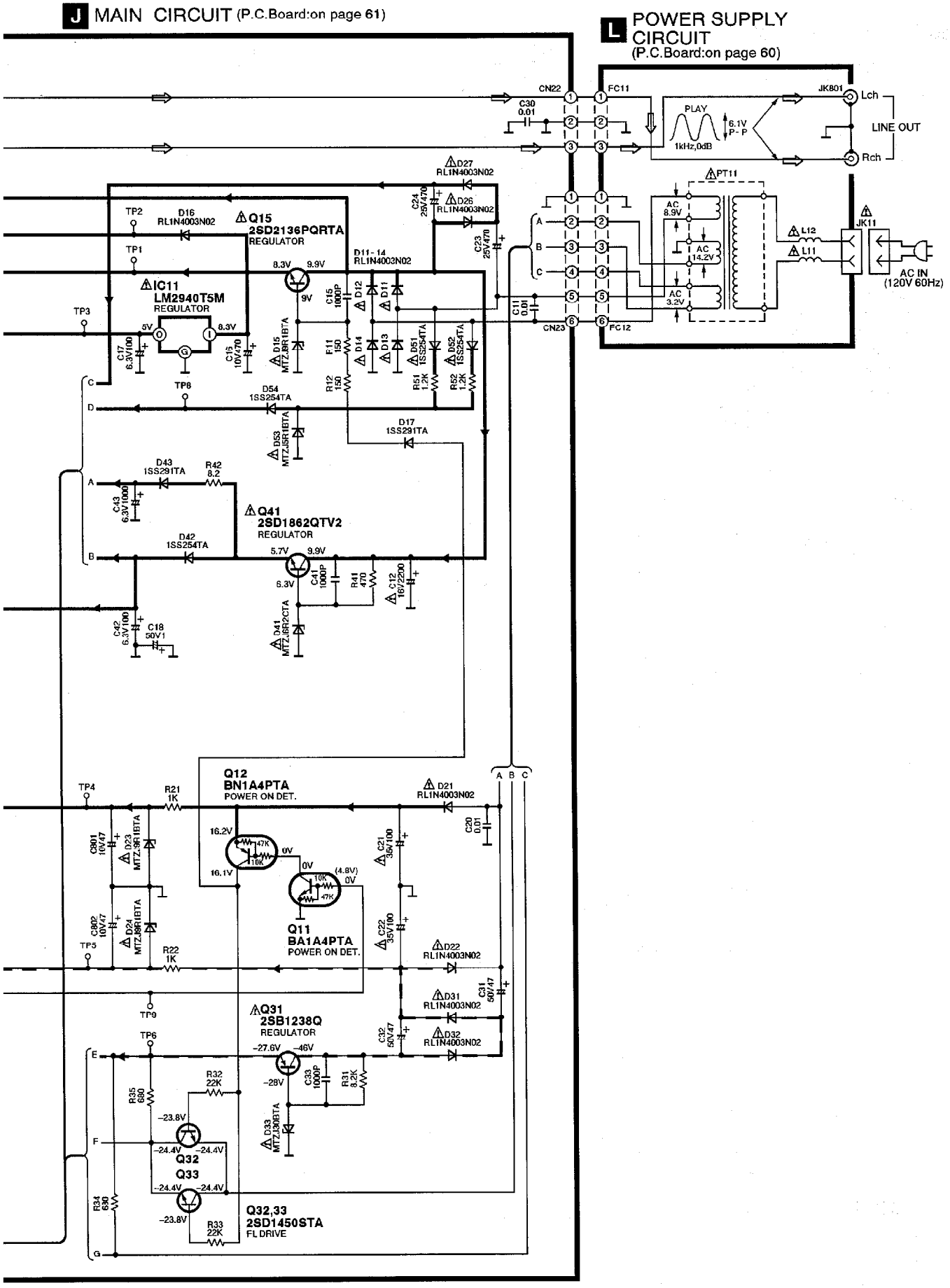

IC702
MN662740RM1
SERVO PROCESSOR/
DIGITAL SIGNAL PROCESSOR/
DIGITAL FILTER/
D/A CONVERTER
Terminal guide:
on page 46
To MOTOR CIRCUIT(CN502) on page 55

B FRONT PANEL CIRCUIT (P.C.Board:on page 60)

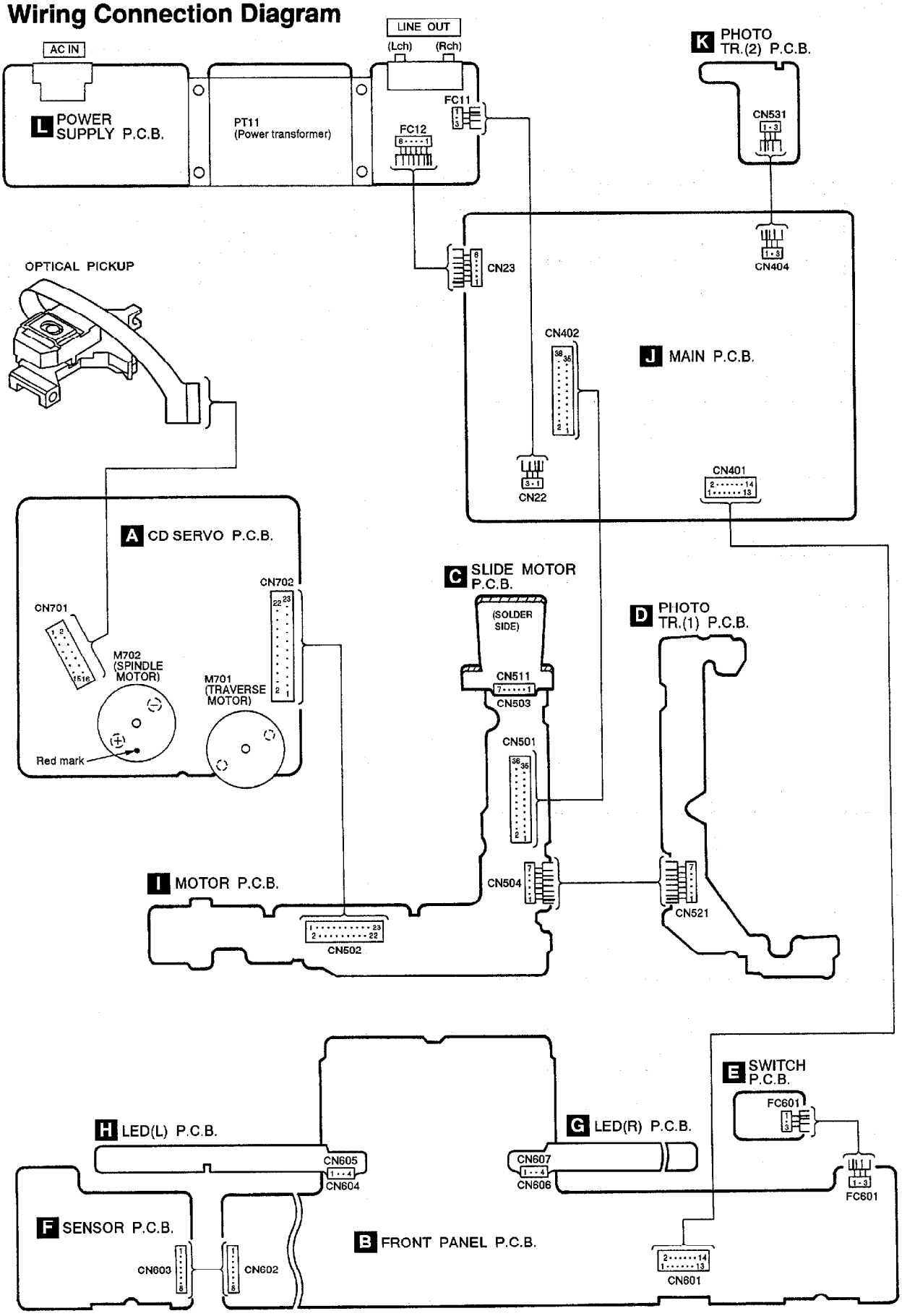



C SLIDE MOTOR CIRCUIT
(P.C.Board:on page 62)
D511
RSOGP1S53V
SPEED SENSOR
CN511
M511
(SLIDE MOTOR)
D PHOTO TR(1) CIRCUIT
(P.C.Board:on page 59)
Q522
PT480F
POSITION SENSOR
D523
BR3433S
D522
GL480V
Q522
D521
LN66S
Q521
Q521
PT4810F
DISC SENSOR
R501 10K
R502 10K
Q501
2SB1320AQRTA
DISC DET.
CN521
I MOTOR CIRCUIT
(P.C.Board:on page 62)
CN503
CN504
TP502
Q502
2SC3311AIQST
DISC DET.
TP501
R503 1K
VR501 10K(B)
DISC SENSOR ADJ.
S503
(CLAMP DET./FREE)
S501
(LOCK DET./MLOCK)
S502
(CLAMP DET.)
M501
(LOADING MOTOR)
To A CD SERVO CIRCUIT(CN702) on page 59
CN502
REST SW
SUBC
/RST
STAT
SBCK
SUBQ
SOCK
BLKCK
/TLOCK
/FLOCK
SENSE
MLD
MDATA
MCLK
P.GND
+B(I)
TX
CLOCK
D.GND
+B(2)
Rch IN
A.GND
Lch IN
CN501
CN402
E SWITCH CIRCUIT
(P.C.Board:on page 62)
FC601
S615
(OPEN/CLOSE)
F SENSOR CIRCUIT
(P.C.Board:on page 62)
S605
(SINGLE ▶)
S604
(PROGRAM)
S610
(POWER)
S609
(DIRECT)
CN603
IC603
RCD12042TH
REMOTE SENSOR
G LED(R) CIRCUIT
(P.C.Board:on page 59)
CN607
D629
D628
D627
D626
D625
D625-629
LNJ801TPSJA
LIGHT
H LED(L) CIRCUIT
(P.C.Board:on page 59)
CN605
D624
D623
D622
D621
D620
D620-624
LNJ801TPSJA
LIGHT
TP7
CN401
IC461
BA6247N
MOTOR DRIVE
DIRECTION SELECT
AMP
DRIVE
Q461
BA1A4ZTA
MOTOR DRIVE
D461
MTZJT55CTA
J MAIN CIRCUIT
(P.C.Board:on page 61)
K PHOTO TR.(2) CIRCUIT
(P.C.Board:on page 61)
CN531
CN404
Q531
PT480F
SINGLE SENSOR
D531
GL480V
R411 180
R410 100K


IC801
BA4558FDXE2
L.P.FILTER AMP
Q801,802
2SD1450STA
MUTING
Q801
Q802
Q851
BN1F4MTA
MUTING CONT.
Q852
BA1F4MTA
MUTING CONT.
IC401
UPD78043F019
SYSTEM CONTROL
Terminal guide:
on page 48
X401
(4.91MHz)
F=4.91Mz
F=7.35kHz
PLAY
1kHz,0dB
T=13.2ms.
T=15ms.


J MAIN CIRCUIT (P.C.Board:on page 61)
L POWER SUPPLY CIRCUIT (P.C.Board:on page 60)
CN22
FC11
C30 0.01
PLAY
1kHz,0dB
6.1V P-P
JK801
Lch
Rch
LINE OUT
D27 RL1N4003N02
D26 RL1N4003N02
C24 25V470
C23 25V470
PT11
AC 8.9V
AC 14.2V
AC 3.2V
L12
L11
JK11
AC IN (120V 60Hz)
TP2
D16 RL1N4003N02
Q15 2SD2136PQRTA REGULATOR
TP1
D11-14 RL1N4003N02
8.3V
9.9V
9V
IC11 LM2940T5M REGULATOR
TP3
5V
8.3V
C17 6.3V100
C15 10V470
C15 1000P
D12
D11
D15 MTZJ6R1BTA
F11 150
D14
D13
D51 1SS254TA
D52 1SS254TA
R12 150
R51 1.2K
R62 1.2K
C11 0.01
CN23
FC12
TP8
D54 1SS254TA
D53 MTZJ5R1BTA
D17 1SS291TA
D43 1SS291TA
R42 8.2
C43 6.3V1000
Q41 2SD1862QTV2 REGULATOR
D42 1SS254TA
5.7V
9.9V
6.3V
C41 1000P
R41 470
C12 16V2200
C42 6.3V100
C18 50V1
D41 MTZJ6R2CTA
Q12 BN1A4PTA POWER ON DET.
TP4
R21 1K
D21 RL1N4003N02
16.2V
16.1V
47K
10K
0V
(4.8V)
C20 0.01
C21 35V100
C301 10V47
D23 MTZJ6R1BTA
C302 10V47
D24 MTZJ6R1BTA
Q11 BA1A4PTA POWER ON DET.
C22 35V100
TP5
R22 1K
D22 RL1N4003N02
D31 RL1N4003N02
C31 50V47
C32 50V47
D32 RL1N4003N02
TP9
TP6
Q31 2SB1238Q REGULATOR
-27.6V
-46V
-28V
R32 22K
C33 1000P
R31 8.2K
R35 680
D33 MTZJ30BTA
-23.8V
-24.4V
Q32
Q33
R34 680
R33 22K
Q32,33 2SD1450STA FL DRIVE
A B C
E
F
G

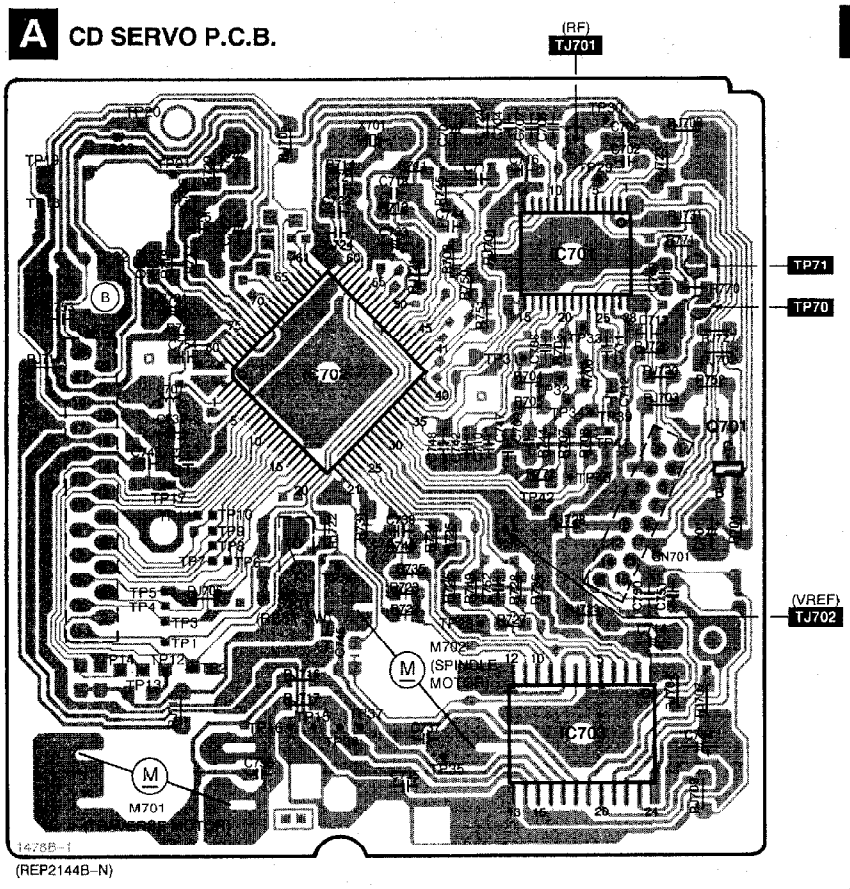
■ Wiring Connection Diagram



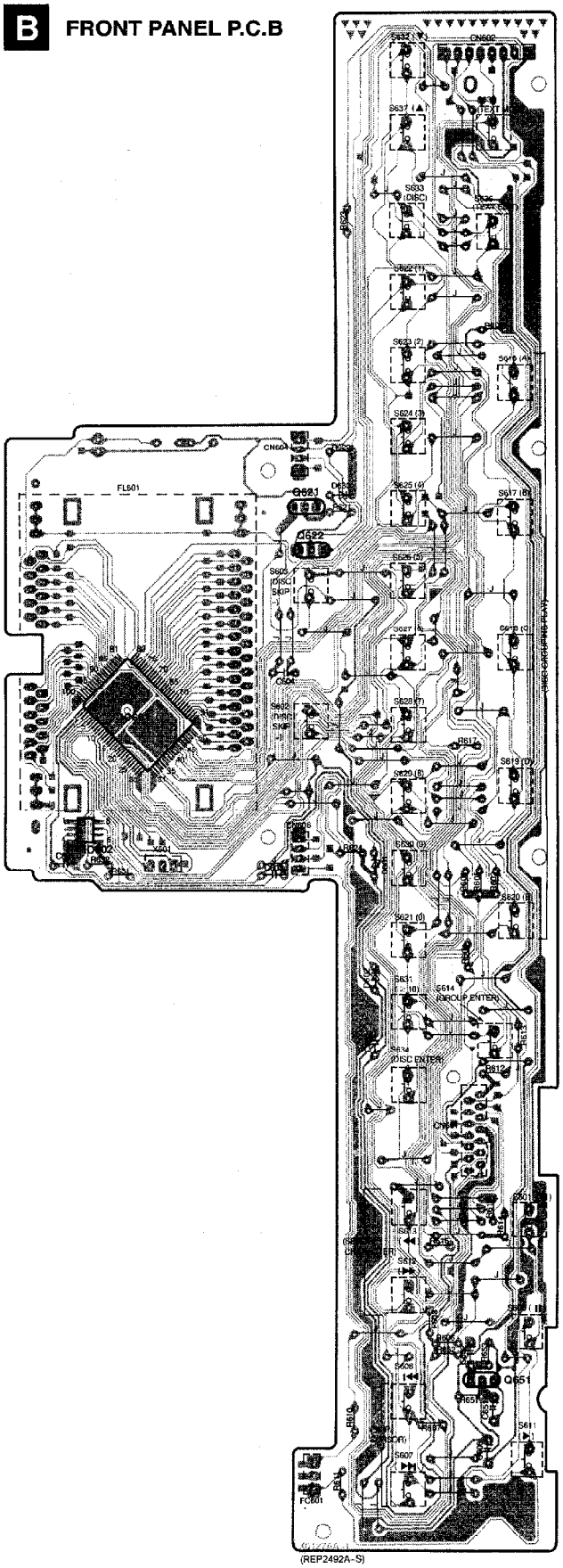
■ Printed Circuit Board Diagram

• This printed circuit board diagram may be modified at any time with the development of new technology.

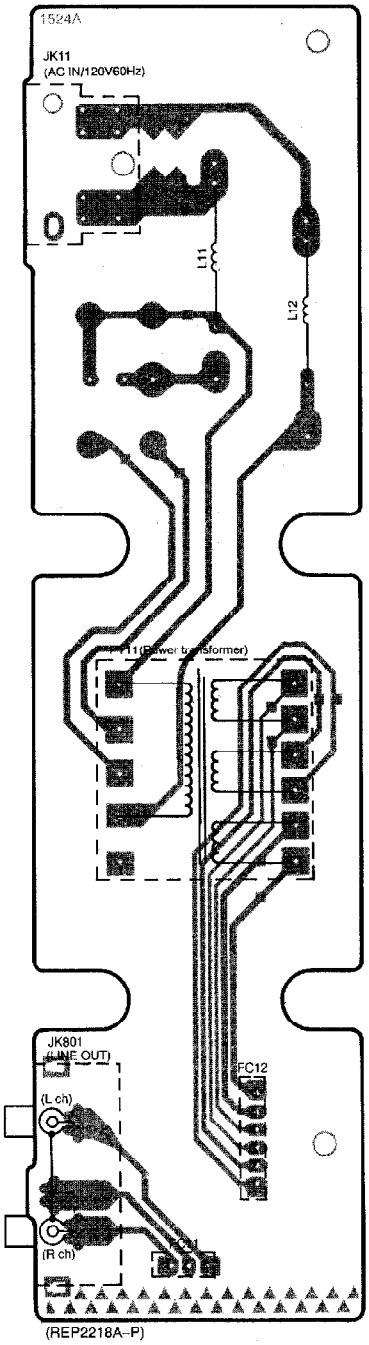
A CD SERVO P.C.B.



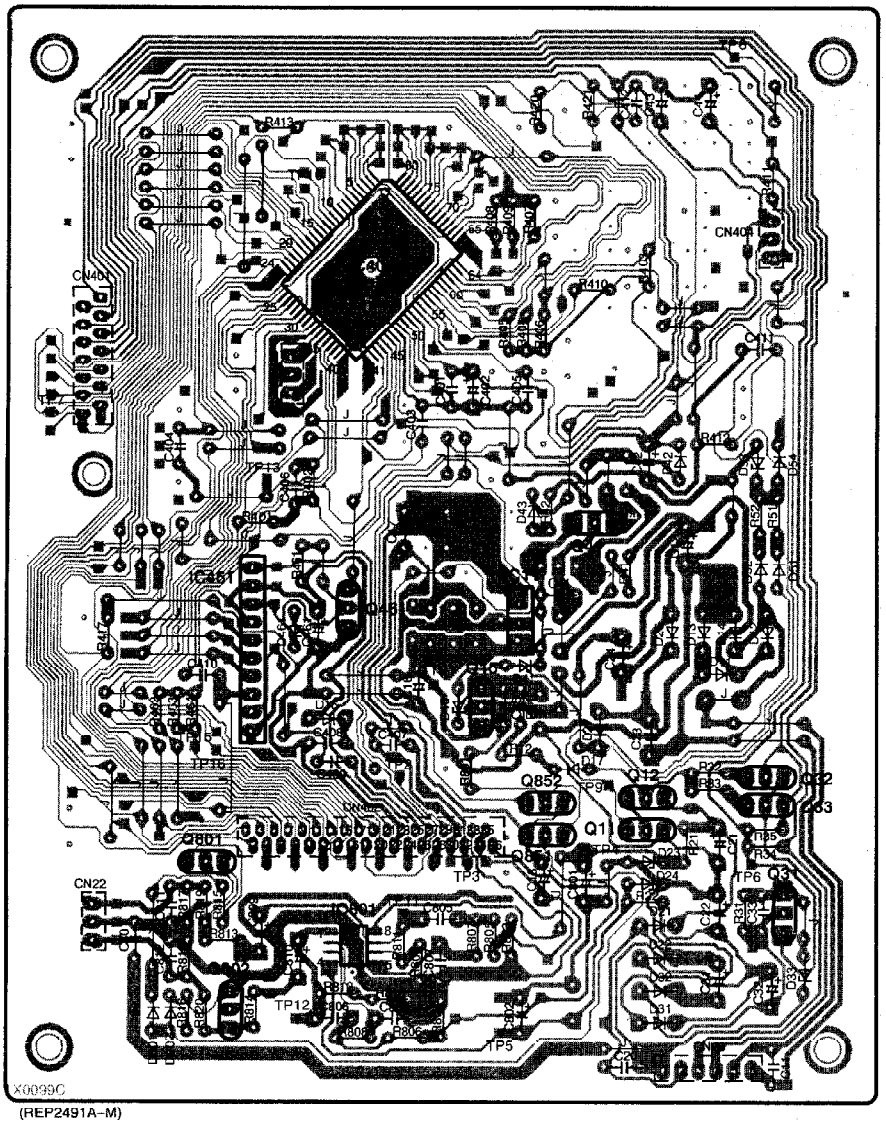
B FRONT PANEL P.C.B



L POWER SUPPLY P.C.B.

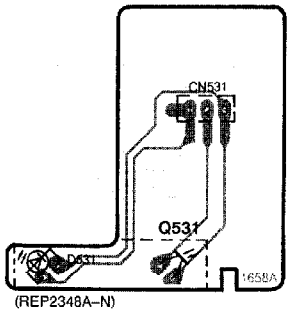


J MAIN P.C.B.



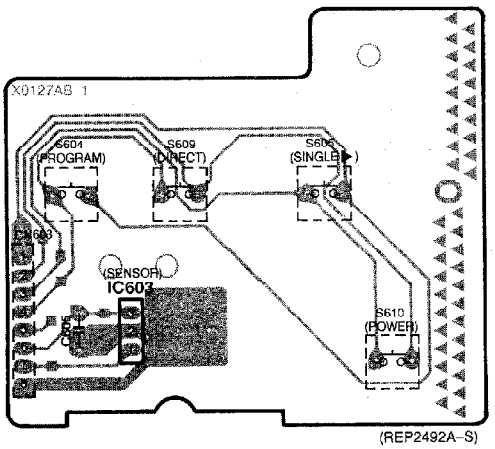
(REP2491A-M)

K PHOTO TR. (2) P.C.B.



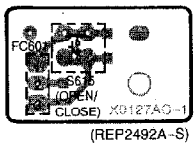
(REP2348A-N)

F SENSOR P.C.B.



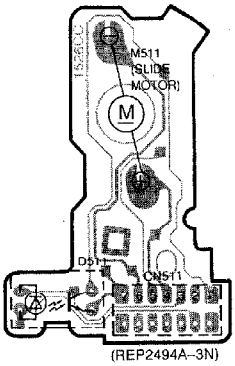
(REP2492A-S)

E SWITCH P.C.B.



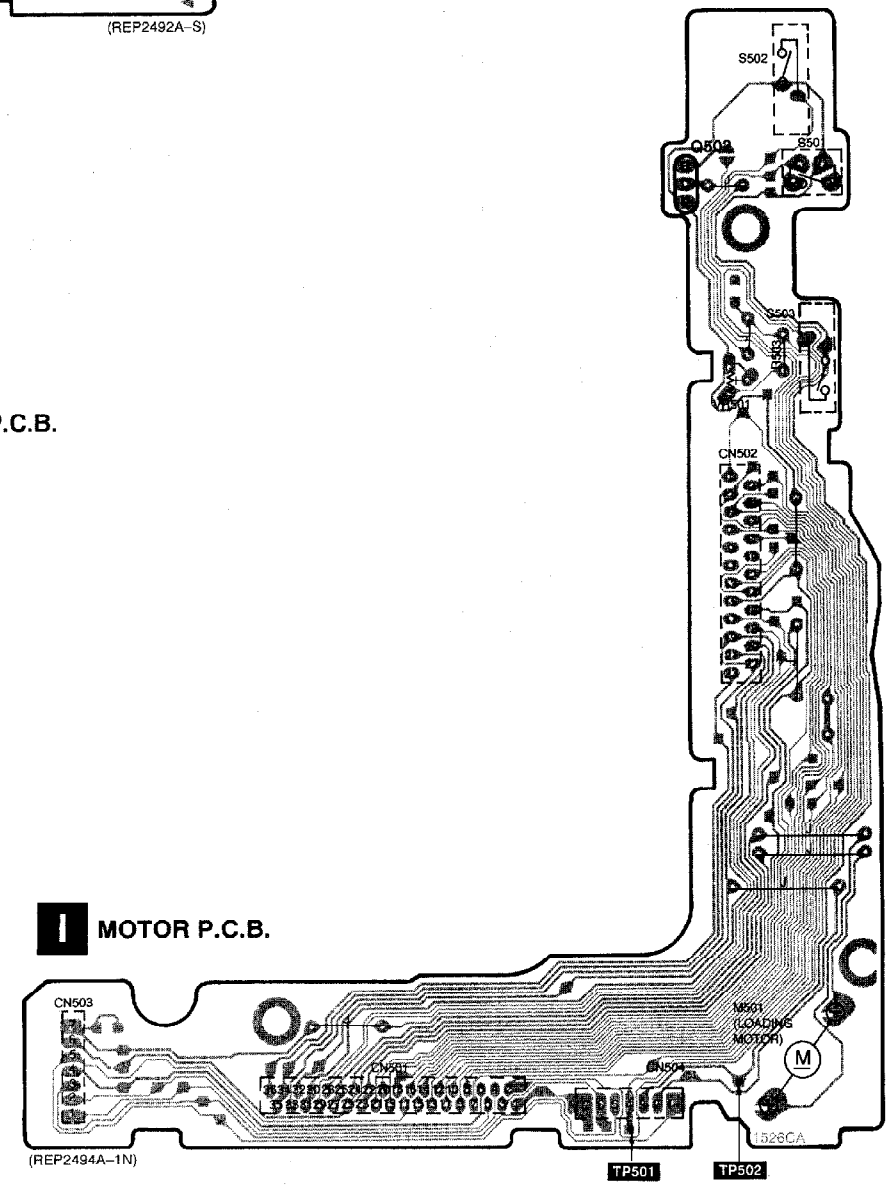
(REP2492A-S)

C SLIDE MOTOR P.C.B.



(REP2494A-3N)

I MOTOR P.C.B.



(REP2494A-1N)

■ Replacement Parts List

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.
* Warning: This product uses a laser diode. Refer to caution statements on page 2.
* [M] indicates in Remarks columns parts that are supplied by MESA.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC11	LM2940T5M	IC	[M]⚠
IC401	UPD78043F019	IC	[M]
IC461	BA6247N	IC	[M]
IC601	UPD780T6G016	IC	[M]
IC602	AT24C64	IC	[M]
IC603	RCD12042TH	IC	[M]
IC701	AN8835SBE1	IC	[M]
IC702	MN662741RPA	IC	[M]
IC703	AN8389SE1	IC	[M]
IC801	BA4558FDXE2	IC	[M]
		TRANSISTOR(S)	
Q11	BA1A4PTA	TRANSISTOR	[M]
Q12	BN1A4PTA	TRANSISTOR	[M]
Q15	2SD2136PQRTA	TRANSISTOR	[M]⚠
Q31	2SB1238QS	TRANSISTOR	[M]⚠
Q32, 33	2SD1450RTA	TRANSISTOR	[M]
Q41	2SD1862QTV2	TRANSISTOR	[M]⚠
Q461	BA1A4ZTA	TRANSISTOR	[M]
Q501	2SB1320AQRTA	TRANSISTOR	[M]
Q502	2SC3311AIQST	TRANSISTOR	[M]
Q521	PT4810F	TRANSISTOR	[M]
Q522	PT480F	TRANSISTOR	[M]
Q531	PT480F	TRANSISTOR	[M]
Q621	BA1A4PTA	TRANSISTOR	[M]
Q622	2SB1238QR	TRANSISTOR	[M]
Q651	2SC2785FF	TRANSISTOR	[M]
Q701	2SA1037AKSTX	TRANSISTOR	[M]
Q801, 802	2SD1450RTA	TRANSISTOR	[M]
Q851	BN1F4MTA	TRANSISTOR	[M]
Q852	BA1F4MTA	TRANSISTOR	[M]
		DIODE(S)	
D11-14	RL1N4003N02	DIODE	[M]⚠
D15	MTZJ9R1BTA	DIODE	[M]⚠
D16	RL1N4003N02	DIODE	[M]
D17	1SS291TA	DIODE	[M]
D21, 22	RL1N4003N02	DIODE	[M]⚠
D23, 24	MTZJ9R1BTA	DIODE	[M]⚠
D26, 27	RL1N4003N02	DIODE	[M]⚠
D31, 32	RL1N4003N02	DIODE	[M]⚠
D33	MTZJ30BTA	DIODE	[M]⚠

Ref. No.	Part No.	Part Name & Description	Remarks
D41	MTZJ6R2CTA	DIODE	[M]⚠
D42	1SS254TA	DIODE	[M]
D43	1SS291TA	DIODE	[M]
D51, 52	1SS254TA	DIODE	[M]⚠
D53	MTZJ5R1BTA	DIODE	[M]⚠
D54	1SS254TA	DIODE	[M]
D461	MTZJ7R5CTA	DIODE	[M]
D511	RSQGP1S53V	DIODE	[M]
D521	LN66S	DIODE	[M]
D522	GL480V	DIODE	[M]
D523	BR3433S	L. E. D.	[M]
D531	GL480V	DIODE	[M]
D601, 602	MTZJ5R1BTA	DIODE	[M]
D620-629	LNJ801TPSJA	L. E. D.	[M]
D630	MTZJ3R0BTA	DIODE	[M]
D801, 802	1SS254TA	DIODE	[M]
		VARIABLE RESISTOR(S)	
VR501	EVMLGGA00B14	V. R	[M]
		COIL(S)	
L11, 12	SLQX400-D	COIL	[M]⚠
L701	RLBN102V-Y	COIL	[M]
		TRANSFORMER(S)	
PT11	RTP1K4C023-X	POWER TRANSFORMER	[M]⚠
		OSCILLATOR(S)	
X401	RSXY4M91M01T	OSCILLATOR	[M]
X601	RSXY4M91M01T	OSCILLATOR	[M]
X701	RSXB16M9J02T	OSCILLATOR	[M]
		DISPLAY TUBE(S)	
FL601	RSL0240-F	DISPLAY TUBE	[M]
		SWITCH(ES)	
S501	RSP1A017-A	SW	[M]
S502, 503	RSH1A005	SW	[M]
S601-614	EVQ21405R	SW	[M]
S615	RSH1A91ZA-A	SW	[M]
S616-637	EVQ21405R	SW	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
S701	RSM0006-P	SW	[M]
		CONNECTOR(S) AND SOCKET(S)	
CN22	RJS1A6603	CONNECTOR(3P)	[M]
CN23	RJS1A6606	CONNECTOR(6P)	[M]
CN401	RJS1A6814-J	CONNECTOR(14P)	[M]
CN402	RJS2A3336M	CONNECTOR(36P)	[M]
CN404	RJS1A6603	CONNECTOR(3P)	[M]
CN501	RJS2A3332	CONNECTOR(36P)	[M]
CN502	RJS1A6223-1	CONNECTOR(23P)	[M]
CN503	RJT057W007-1	CONNECTOR(7P)	[M]
CN504	RJS7T47A	CONNECTOR(7P)	[M]
CN511	RJU057W007	SOCKET(7P)	[M]
CN521	RJS7T77A	CONNECTOR(7P)	[M]
CN531	SJT30344-H	CONNECTOR(3P)	[M]
CN601	RJS1A6714	CONNECTOR(14P)	[M]
CN602	SJS50882JQH	CONNECTOR(8P)	[M]
CN603	SJT30845JQ	CONNECTOR(8P)	[M]
CN604	RJT057W004-1	CONNECTOR(4P)	[M]
CN605	RJU057W004	SOCKET(4P)	[M]
CN606	RJT057W004-1	CONNECTOR(4P)	[M]
CN607	RJU057W004	SOCKET(4P)	[M]
CN701	RJU035T016-1	CONNECTOR(16P)	[M]
CN702	RJS1A6723-1Q	CONNECTOR(23P)	[M]
		FLAT CABLE(S)	
FC11	REZ0899	FLAT CABLE(3P)	[M]
FC12	REZ0898	FLAT CABLE(6P)	[M]
FC601	REZ0831	FLAT CABLE(3P)	[M]
		JACK(S)	
JK11	SJSD16-1	AC INLET	[M] ⚠
JK801	RJH3201N	LINE OUT	[M]
		TEST JUMPER	
TJ701, 702	EYF8CU	TEST JUMPER	[M]

■ Resistors and Capacitors

Notes: * Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM)
* [M] indicates in Remarks columns parts that are supplied by MESA.

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R11, 12	ERDS2FJ151	1/4W 150 [M]
R21, 22	ERDS2FJ102	1/4W 1K [M]
R31	ERDS2FJ822	1/4W 8.2K [M]
R32, 33	ERDS2FJ223	1/4W 22K [M]
R34, 35	ERDS2FJ681	1/4W 680 [M]
R41	ERDS2FJ471	1/4W 470 [M]
R42	ERDS2FJ8R2	1/4W 8.2 [M]
R51, 52	ERDS2FJ122	1/4W 1.2K [M]
R401	ERDS2FJ103	1/4W 10K [M]
R402	ERDS2FJ473	1/4W 47K [M]
R403-407	ERDS2FJ472	1/4W 4.7K [M]
R408, 409	ERDS2FJ103	1/4W 10K [M]
R410	ERDS2FJ104	1/4W 100K [M]
R411	ERDS2FJ181	1/4W 180 [M]
R412	ERDS2FJ472	1/4W 4.7K [M]
R413	ERDS2FJ181	1/4W 180 [M]
R417	ERDS2FJ103	1/4W 10K [M]
R420	ERDS2FJ472	1/4W 4.7K [M]
R421	ERDS2FJ103	1/4W 10K [M]
R461	ERDS2FJ271	1/4W 270 [M]
R462	ERDS2FJ331	1/4W 330 [M]
R463, 464	ERDS2FJ821	1/4W 820 [M]
R501, 502	ERDS2FJ103	1/4W 10K [M]
R503	ERDS2FJ102	1/4W 1K [M]
R601-608	ERDS2FJ472	1/4W 4.7K [M]
R610, 611	ERDS2FJ331	1/4W 330 [M]
R612-617	ERDS2FJ100	1/4W 10 [M]
R621	ERDS2FJ332	1/4W 3.3K [M]
R622	ERDS2FJ680	1/4W 68 [M]
R623, 624	ERDS2FJ100	1/4W 10 [M]
R631	ERDS2FJ103	1/4W 10K [M]
R632	ERDS2FJ102	1/4W 1K [M]
R651	ERDS2FJ103	1/4W 10K [M]
R652	ERDS2FJ471	1/4W 470 [M]
R653	ERDS2FJ103	1/4W 10K [M]
R701	ERJ6GEYJ4R7V	1/10W 4.7 [M]
R703	ERJ6GEYJ823	1/10W 82K [M]
R704	ERJ6GEYJ102A	1/10W 1K [M]
R705	ERJ6GEYJ103V	1/10W 10K [M]
R706	ERJ6GEYJ102A	1/10W 1K [M]
R707	ERJ6GEYJ474V	1/10W 470K [M]
R708	ERJ6GEYJ154V	1/10W 150K [M]
R709	ERJ6GEYJ683V	1/10W 68K [M]
R711	ERJ6GEYJ154V	1/10W 150K [M]
R712	ERJ6GEYJ221V	1/10W 220 [M]
R714	ERJ6GEYJ121V	1/10W 120 [M]

Ref. No.	Part No.	Values & Remarks
R717, 718	ERJ6GEYJ102A	1/10W 1K [M]
R720	ERJ6GEY0R00A	1/10W 0.00 [M]
R721	ERJ6GEYJ101V	1/10W 100 [M]
R722	ERJ6GEYJ563V	1/10W 56K [M]
R723	ERJ6GEYJ182V	1/10W 1.8K [M]
R724	ERJ6GEYJ333V	1/10W 33K [M]
R725	ERJ6GEYJ472V	1/10W 4.7K [M]
R726	ERJ6GEYJ473V	1/10W 47K [M]
R727	ERJ6GEYJ822V	1/10W 8.2K [M]
R728	ERJ6GEYJ103V	1/10W 10K [M]
R731	ERJ6GEYJ822V	1/10W 8.2K [M]
R735, 736	ERJ6GEYJ101V	1/10W 100 [M]
R744	ERJ6GEYJ103V	1/10W 10K [M]
R745	ERJ6GEYJ155V	1/10W 1.5M [M]
R748	ERJ6GEYJ182V	1/10W 1.8K [M]
R749	ERJ6GEYJ682V	1/10W 6.8K [M]
R750, 751	ERJ6GEYJ473V	1/10W 47K [M]
R752	ERJ8GEYJ220V	1/8W 22 [M]
R770, 771	ERJ6GEYJ155A	1/10W 1.5M [M]
R772	ERJ6GEYJ273A	1/10W 27K [M]
R803, 804	ERDS2FJ224	1/4W 220K [M]
R805, 806	ERDS2FJ822	1/4W 8.2K [M]
R807, 808	ERDS2FJ123	1/4W 12K [M]
R809-812	ERDS2FJ333	1/4W 33K [M]
R813-816	ERDS2FJ102	1/4W 1K [M]
R817, 818	ERDS2FJ473	1/4W 47K [M]
R819, 820	ERDS2FJ100	1/4W 10 [M]
R851	ERDS2FJ222	1/4W 2.2K [M]
		CHIP JUMPER(S)
J701-709	ERJ8GEY0R00A	1/8W 0 [M]
J714-717	ERJ8GEY0R00A	1/8W 0 [M]
J721-724	ERJ6GEY0R00A	1/10W 0 [M]
J726-731	ERJ6GEY0R00A	1/10W 0 [M]
		CAPACITORS
C11	ECBT1E103ZF	25V 0.01U [M]
C12	ECA1CM222EV	16V 2200U [M]⚠
C15	ECBT1H102KB5	50V 1000P [M]
C16	ECA1AM471B	10V 470U [M]
C17	ECEA0JKA101B	6.3V 100U [M]
C18	ECEA1HKA010B	50V 1U [M]
C20	ECBT1E103ZF	25V 0.01U [M]
C21, 22	RCA1VM101BT	35V 100P [M]⚠
C23, 24	ECA1EM471B	25V 470U [M]
C30	ECBT1E103ZF	25V 0.01U [M]
C31, 32	ECA1HM470B	50V 470U [M]

Ref. No.	Part No.	Values & Remarks
C33	ECBT1H102KB5	50V 1000P [M]
C41	ECBT1H102KB5	50V 1000P [M]
C42	ECEA0JKA101B	6.3V 100U [M]
C43	ECA0JM102B	6.3V 1000U [M]
C44	ECEA1HKA010B	50V 1U [M]
C401	ECBT1C103NS5	16V 0.01U [M]
C402	ECEA0JKA101B	6.3V 100U [M]
C403, 404	ECBT1H221KB5	50V 220P [M]
C405	ECBT1C103NS5	16V 0.01U [M]
C406	ECBT1H102KB5	50V 1000P [M]
C407-412	ECBT1C103NS5	16V 0.01U [M]
C461	ECEA1AKA470B	10V 47U [M]
C601	ECBT1C103NS5	16V 0.01U [M]
C602	ECBT1H102KB5	50V 1000P [M]
C603	ECBT1C103NS5	16V 0.01U [M]
C604	ECBT1H391KB5	50V 390P [M]
C605	ECFR1E104ZF5	25V 0.1U [M]
C606	ECEA0JKA101B	6.3V 100U [M]
C651	ECEA1HKA010B	50V 1U [M]
C652	ECEA1EKA4R7B	25V 4.7U [M]
C701	ECEA0JKA330I	6.3V 33U [M]
C702	ECUZNE104MBN	25V 0.1U [M]
C703	ECEA0JKA101I	6.3V 100U [M]
C704, 705	ECUZNE104MBN	25V 0.1U [M]
C706	ECUV1H272KBN	50V 2700P [M]
C707	ECUV1E273KBN	H 25V 0.027U [M]
C708	ECUE1H472KBN	H 50V 4700P [M]
C709	ECUE1C473KBN	H 16V 0.047U [M]
C710	ECUV1H182KBN	H 50V 1800P [M]
C711, 712	ECUWNE104ZFN	H 25V 0.1U [M]
C713	ECUV1C104MBM	16V 0.1U [M]
C714	ECEA0JKA101I	6.3V 100U [M]
C716	ECUE1H561KBN	50V 560P [M]
C717	ECUWNE104ZFN	25V 0.1U [M]
C718	ECUV1C224KBM	16V 0.22U [M]
C721, 722	ECUV1H100DCN	H 50V 10P [M]
C723	ECFA1AKA221I	10V 220U [M]
C724	ECUV1C104MBM	16V 0.1U [M]
C725, 726	ECUE1H102KBN	50V 1000P [M]
C727, 728	ECEA1HPK010I	50V 1U [M]
C730	ECUWNE104ZFN	25V 0.1U [M]
C731, 732	ECEA0JKA221I	6.3V 220U [M]
C733	ECUZNE104MBN	25V 0.1U [M]
C734	ECEA1AKA221I	10V 220U [M]
C735-737	ECUWNE104ZFN	25V 0.1U [M]
C738	ECUV1C154KBN	H 16V 0.15U [M]
C742	ECUV1E273KBN	H 25V 0.027U [M]
C743	ECUWNE104ZFN	H 25V 0.1U [M]
C744	ECUE1E822KBN	H 25V 8200P [M]

Ref. No.	Part No.	Values & Remarks
C745	ECUE1H102KBN	H 50V 1000P [M]
C747	ECUE1H222KBN	H 50V 2200P [M]
C748	ECUV1H471KBM	H 50V 470P [M]
C749	ECUZNE104MBN	H 25V 0.1U [M]
C750	ECUV1C104MBM	16V 0.1U [M]
C751	ECUZNE104MBN	H 25V 0.1U [M]
C752	ECUE1H152KBN	H 50V 1500P [M]
C753	ECUV1H471KBM	H 50V 470P [M]
C754	ECUE1H471KBN	H 50V 470P [M]
C801, 802	ECEA1AKA470B	10V 47U [M]
C805-808	ECCR1H391J5	50V 390P [M]
C809, 810	ECEA0JKA47UB	6.3V 47U [M]
C811, 812	ECBT1H102KB5	50V 1000P [M]

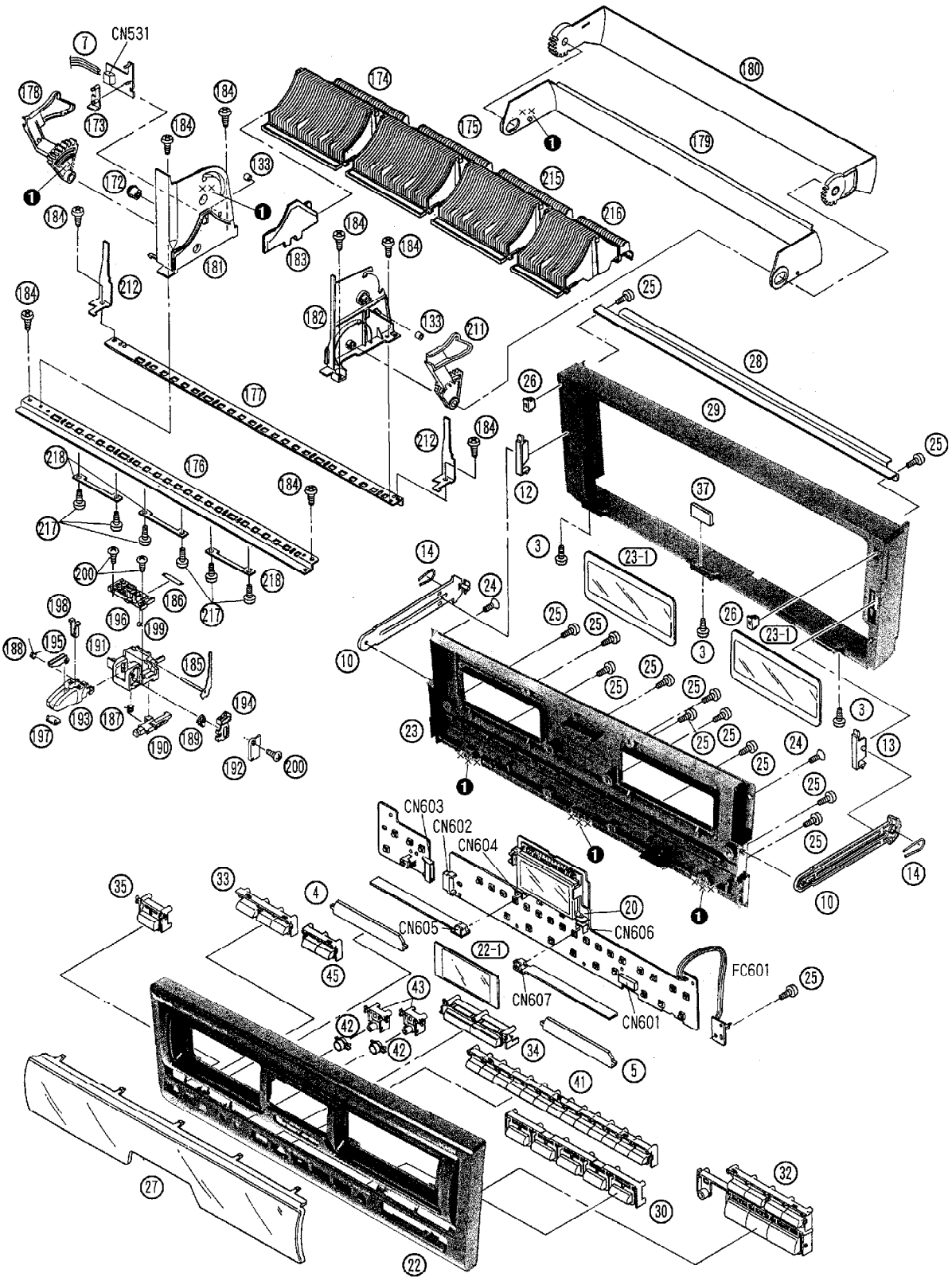
■ Replacement Parts List

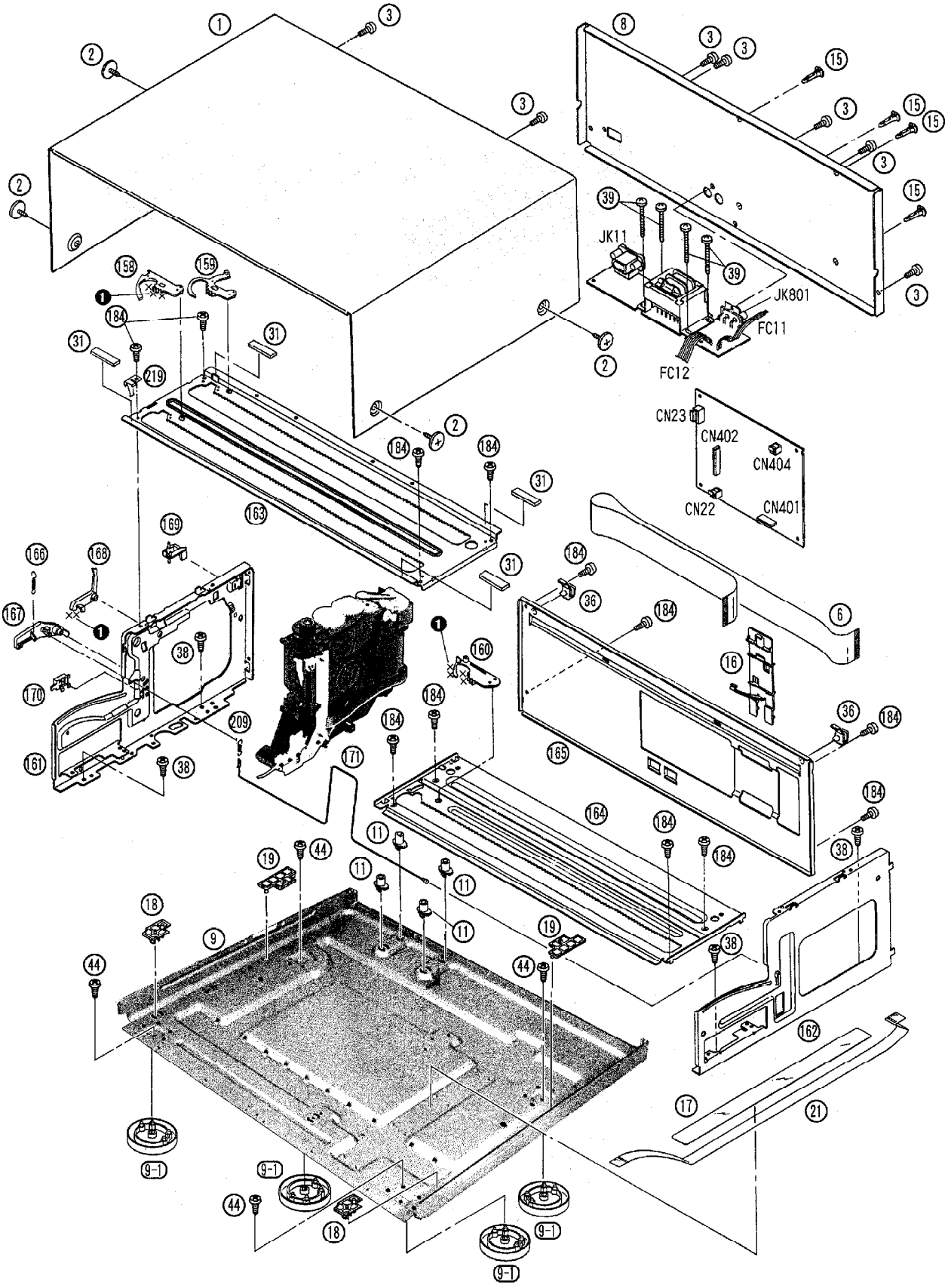
Notes: * The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)Parts without these indications can be used for all areas.
* [M] indicates in Remarks columns parts that are supplied by MESA.

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RKM0336-K	CABINET	[M]
2	SNE2129-1	SCREW	[M]
3	XTBS3+8JFZ1	SCREW	[M]
4	RGL0310-Q	DISC INDICATOR(L)	[M]
5	RGL0325-Q	DISC INDICATOR(R)	[M]
6	REZ0988	FLAT CABLE(36P)	[M]
7	REZ0928	FLAT CABLE(3P)	[M]
8	RGR0247A-GA	REAR PANEL	[M] (P)
8	RGR0247A HA	REAR PANEL	[M] (PC)
9	RFKJLM410PK	BOTTOM CHASSIS ASS'Y	[M]
9-1	RKA0053-A	FOOT	[M]
10	RKJ0016	SIDE STAY	[M]
11	RKQ0089	PCB HOLDER	[M]
12	RKQ0193-K	SIDE GRIL(L)	[M]
13	RKQ0194-K	SIDE GRIL(R)	[M]
14	RME0209	STAY SPRING	[M]
15	RMN0341	PCB HOLDER	[M]
16	RMR0950-K	FFC HOLDER	[M]
17	RMR0961-Q	FFC COVER	[M]
18	RMX0115	MECHA SPACER A	[M]
19	RMX0116	MECHA SPACER B	[M]
20	RMN0443	FL HOLDER	[M]
21	REZ0830	14P FFC	[M]

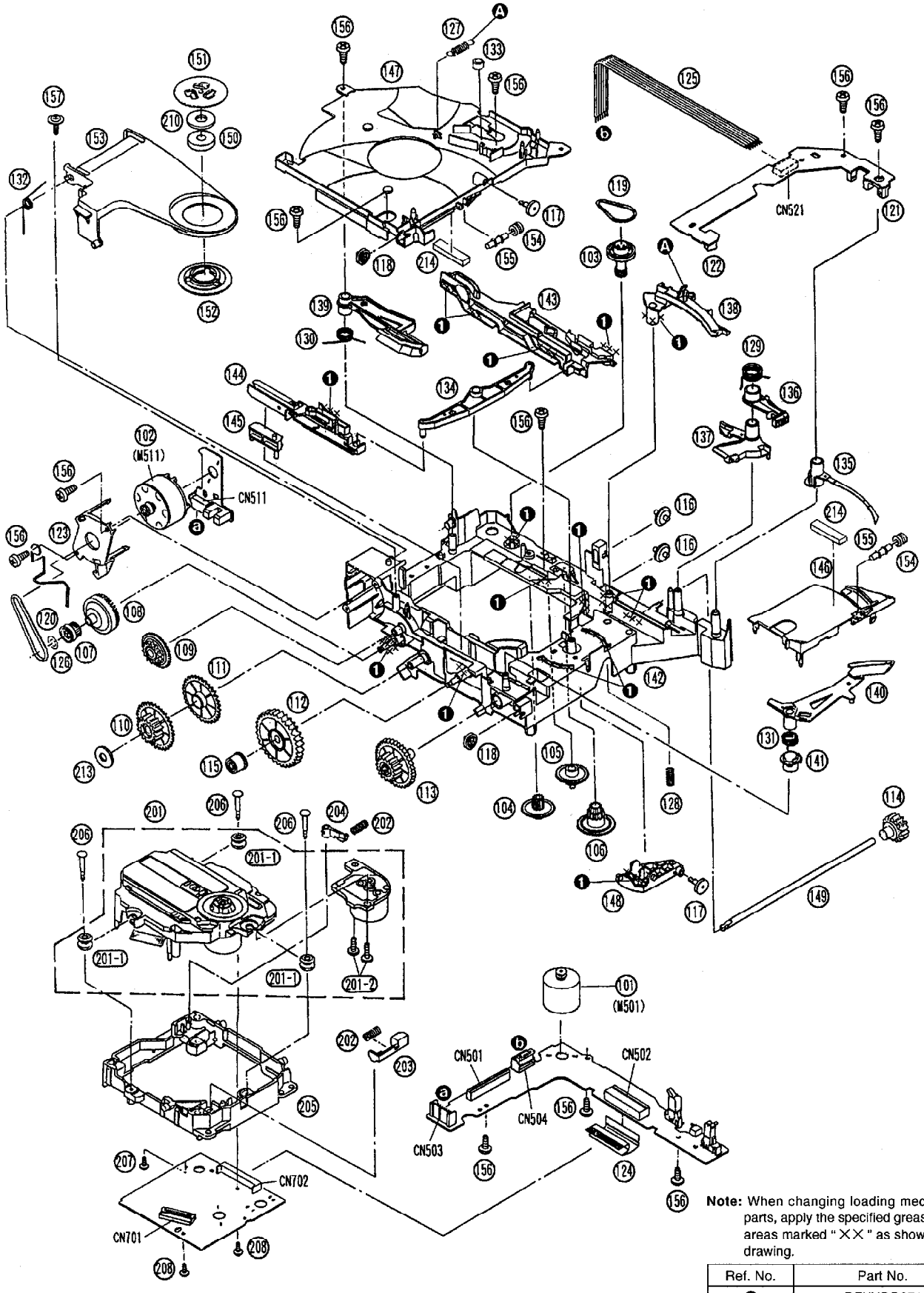
Ref. No.	Part No.	Part Name & Description	Remarks
22	RFKGLM410PK	FRONT PANEL ASS'Y	[M]
22-1	RGK0778-Q	FL ORNAMENT PLATE	[M]
23	RFKHLM410PK	BACK PANEL ASS'Y	[M]
23-1	RGK0777-Q1	REAR ORNAMENT PLATE	[M]
24	RHD26023-K	SCREW	[M]
25	RHD26028-T	SCREW	[M]
26	RKG0009	MAGNET CATCH	[M]
27	RKW0425-Q	FRONT ORNAMENT PLATE	[M]
28	RMA0998	MECHA ANGLE	[M]
29	RGP0515A-K	GRILLE	[M]
30	RGU1323-K	GROUPING BUTTON	[M]
31	RMG0429-K	CUSHION RUBBER	[M]
32	RGU1319-K1	MAIN BUTTON	[M]
33	RGU1320-K1	PROGRAM BUTTON	[M]
34	RGU1321-K1	DISC SKIP BUTTON	[M]
35	RGU1322-K1	POWER BUTTON	[M]
36	SHRD163	CORD HOLDER	[M]
37	RMQ0673	GRILL SHEET	[M]
38	XTB3+10FFZ	SCREW	[M]
39	XTB3+20JFZ	SCREW	[M]
40	REZ0945	4-PIN WIRE	[M]
41	RGU1324-K	10KEY BUTTON	[M]
42	RGK0534-N	BUTTON ORNAMENT	[M]
43	RGU1325-K1	ID SCAN BUTTON	[M]
44	XTB3+6J	SCREW	[M]
45	RGU1327A-K	TEXT BUTTON	[M]

■ Cabinet Parts Location




JK11
JK801
FC11
FC12
CN23
CN402
CN404
CN22
CN401

■ Loading Mechanism Parts



Note: When changing loading mechanism parts, apply the specified grease to the areas marked "XX" as shown in the drawing.

Ref. No.	Part No.
❶	RFKXPG671

■ Replacement Parts List

Notes: * Important safety notice:
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Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.
* Warning: This product uses a laser diode. Refer to caution statements on page 2.
* [M] indicates in Remarks columns parts that are supplied by MESA.

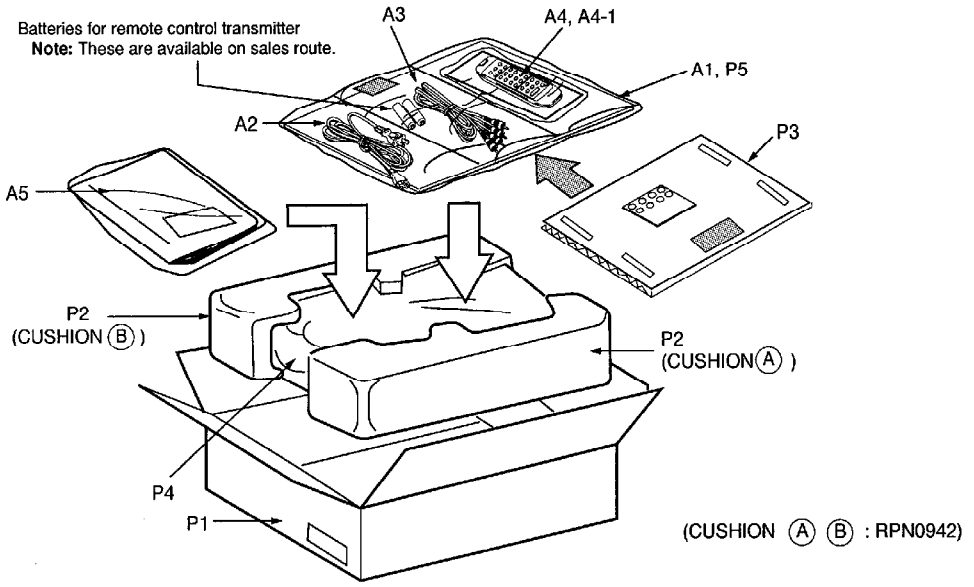
Ref. No.	Part No.	Part Name & Description	Remarks
		LOADING MECHANISM	
101	RFKPLMC50PAK	LOADING MOTOR(M501) ASS'Y	[M]
102	RFKNLMC50PBK	SLIDE MOTOR(M511) ASS'Y	[M]
103	RDG0336	PULLEY GEAR	[M]
104	RDG0337	REDUCTION GEAR(A)	[M]
105	RDG0338	REDUCTION GEAR(B)	[M]
106	RDG0339	DRIVE GEAR	[M]
107	RDG0340	SLIDE PULLEY GEAR	[M]
108	RDG0341	COUNT RING	[M]
109	RDG0342	SLIDE REDUCTION GEAR	[M]
110	RDG0343	REAR SLIDE GEAR	[M]
111	RDG0344	SLIDE GEAR(A)	[M]
112	RDG0345	SLIDE GEAR(B)	[M]
113	RDG0346	FRONT SLIDE GEAR	[M]
114	RDG0347	LOWER SLIDE GEAR	[M]
115	RDP0080	UPPER ROLLER	[M]
116	RDP0081	LOWER ROLLER	[M]
117	RDP0082	ROPE ROLLER(A)	[M]
118	RDP0083	ROPE ROLLER(B)	[M]
119	RDV0041	LOADING BELT	[M]
120	RDV0046	SLIDE BELT	[M]
121	RMN0399	SENSOR HOLDER	[M]
122	RMN0358	LED HOLDER	[M]
123	RMN0356	MOTOR HOLDER	[M]
124	REZ0829	FFC(23P)	[M]
125	REZ0832	FLAT CABLE(7P)	[M]
126	RHW21009	WASHER	[M]
127	RMB0453	FEED LEVER SPRING	[M]
128	RMB0483	LOCK CANCELLATION SPRING	[M]
129	RME0194	SUB LEVER SPRING	[M]
130	RME0195	SIZE LEVER SPRING	[M]
131	RME0196	RETURN LEVER SPRING	[M]
132	RME0197	CLAMP SPRING	[M]
133	RMG0200	CUSHION RUBBER	[M]
133	RMG0200	CUSHION RUBBER	[M]
134	RML0411	CONNECTION LEVER	[M]
135	RML0412	FRONT FEED LEVER	[M]
136	RML0413	FEED SUB LEVER	[M]
137	RML0414	GUIDE LEVER	[M]
138	RML0415	REAR FEED LEVER	[M]
139	RML0416	SIZE DETECTION LEVER	[M]
140	RML0417	RETURN LEVER(A)	[M]
141	RML0418	RETURN LEVER(B)	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
142	RFKNLMC50PBK	MECHANISM BASE ASS'Y	[M]
143	RMR0921-K	LOWER SLIDE PLATE	[M]
144	RMR0922-K	UPPER SLIDE PLATE	[M]
145	RMR0923-W	SLIDE SUPPORT PLATE	[M]
146	RMR0924-K	DISC GUIDE(L)	[M]
147	RMR0925-K	DISC GUIDE(R)	[M]
148	RMR0927-K	ROLLER BASE	[M]
149	RMS0519	CONNECTION SHAFT	[M]
150	RHM245ZA	MAGNET	[M]
151	RMR0334	FIXED PLATE	[M]
152	RMR0761-W	CLAMPER	[M]
153	RFKNLMC400EK	CLAMP PLATE	[M]
154	RDP0091	DISC ROLLER	[M]
155	RDP0092	GUIDE ROLLER	[M]
156	XTBS26+10J	SCREW	[M]
157	XTWS3+10Q	SCREW	[M]
158	RDG0333	FRONT LOCK GEAR	[M]
159	RDG0334	REAR LOCK GEAR	[M]
160	RDG0374	LOWER LOCK GEAR	[M]
161	RMA0904	SLIDE PLATE(L)	[M]
162	RMA0905	SLIDE PLATE(R)	[M]
163	RMA0914	UPPER RAIL	[M]
164	RMA0915	LOWER RAIL	[M]
165	RMA0916	REAR SUPPORT PLATE	[M]
166	RMB0469	LOCK ARM SPRING	[M]
167	RML0421	STAY LOCK ARM	[M]
168	RML0436	FRONT LOCK PLATE	[M]
169	RML0437	REAR LOCK PLATE	[M]
170	RMR0959-K	ROPE GUIDE	[M]
171	RMW0010	GUIDE ROPE	[M]
172	RDG0183	DAMPER GEAR	[M]
173	RMN0388	SINGLE SENSOR HOLDER	[M]
174	RFKNLMC50PCK	DISC STOKER(A)	[M]
175	RFKNLMC50PDK	DISC STOKER(B)	[M]
176	RMA0912	FRONT STOCKER STAND	[M]
177	RMA0913	REAR STOCKER STAND	[M]
178	RML0419	SHUTTER LEVER(L)	[M]
179	RMR0935-K	SHUTTER INSIDE	[M]
180	RMR0936-K	SHUTTER OUTSIDE	[M]
181	RMR0932-K	SHUTTER SUPPORT(L)	[M]
182	RMR0947-K	SHUTTER SUPPORT(R)	[M]
183	RMR0948-H	STOCKER PARTITION PLATE	[M]
184	XTB3+6F	SCREW	[M]
185	RFKNLMC50PEK	EJECT PUSH LEVER ASS'Y	[M]
186	RMC0291	EJECT CLICK SPRING	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
187	RME0203	EJECT SLIDE SPRING	[M]
188	RME0204	EJECT LEVER SPRING	[M]
189	RML0438	EJECT MIDDLE LEVER	[M]
190	RML0439	EJECT SLIDE PLATE	[M]
191	RMR0938-K	EJECT BASE	[M]
192	RMR0939-K	EJECT COVER	[M]
193	RMR0940-K	EJECT LEVER	[M]
194	RMR0941-H	EJECT BUTTON	[M]
195	RMR0943-H	EJECT HOLD LEVER	[M]
196	RMR0958-K	EJECT GUIDE	[M]
197	RMR0964-K	EJECT PAD(A)	[M]
198	RMR0965-K	EJECT PAD(B)	[M]
199	SFYB5-32	STEEL BALL	[M]
200	XTN2+6JFZ	SCREW	[M]
201	RAE0150Z	TRAVERSE DECK ASS'Y	[M]
201-1	SHGD113-1	FLOATING RUBBER	[M]
201-2	SNSD38	SCREW	[M]
202	RMB0455	FRONT SUPPORT SPRING	[M]
203	RML0423	FRONT SUPPORT ARM	[M]
204	RML0424-1	REAR SUPPORT ARM	[M]
205	RMR0937-K	TRAVERSE CHASSIS	[M]
206	RMS0123-1	TRAVERSE FIXED PIN	[M]
207	XTN2+6G	SCREW	[M]
208	XTV2+6G	SCREW	[M]
209	RMB0454	GUARD ROPE SPRING	[M]
210	RMA0989	BACK YOKE	[M]
211	RML0420	SHUTTER LEVER(R)	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
212	RMA1006	SHUTTER LEVER PLATE	[M]
213	RMW42002	WASHER	[M]
214	RMF0237-1	GUIDE FELT	[M]
215	RFKNLMC400PA	DISC STOCKER(C)	[M]
216	RFKNLMC400PB	DISC STOCKER(D)	[M]
217	RHD20047-K	SCREW	[M]
218	RMA0995	STOPPER	[M]
219	RMC0316	SPRING PLATE	[M]
		PACKING MATERIAL	
P1	RPG3376	PACKING CASE	[M]
P2	RPN0942	POLYFOAM	[M]
P3	RPQ0164	ACCESSORY PAD	[M]
P4	RPFX0012	MIRAMAT BAG	[M]
P5	RPF0139	BAG	[M]
P6	SPB1061		[M]
		ACCESSORIES	
A1	RFKSLMC310PK	INSTRUCTION MANUAL ASS'Y	[M]
A2	SJA172	AC CODE	[M]
A3	RJL2P004B08	STEREO CONNECTION CABLE	[M]
A4	FUR644972	REMOTE CONTROL	[M]
A4-1	UR64EC1371	BATTERY COVER	[M]
A5	RFA0623-K1	FILE BOOK	[M]

■ Packaging



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